Case Studies in Food Policy for Developing Countries

Volume 3

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Case Studies in Food Policy for Developing Countries

Volume 3:
Institutions and International Trade Policies

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Editors

In collaboration with
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Advisory Task Force and Reviewers

In order to help assure relevancy of the cases and the textbook to real policy situations and problems in developing countries, seven individuals from developing countries (two from each of Africa, Asia, and Latin America and one from the Former Soviet Union) form an advisory task force for the program. These individuals, who are university faculty members, high-level policy advisors, and former policy-makers, advise on all substantive aspects of the program, including the choice and content of cases and the content of the textbook.

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All cases were peer reviewed. A list of reviewers is found on http://cip.cornell.edu/gfs.

Introduction and Overview

Food systems are complex, and public sector action is critical to guide them toward the fulfillment of societal goals. Insufficient understanding of how food systems work, however, and failure to understand the effects of potential and actual government action are major reasons why food systems operate at suboptimal levels. Nowhere are the consequences of a poorly functioning food system more severe than in developing countries, where every fourth preschool child is malnourished and more than 800 million people suffer from food insecurity. At the same time, chronic diseases caused by being overweight or obese are becoming a major public health and economic development problem in both high- and low-income countries. Although per capita food consumption has increased in Asia during the past 40 years, the use of natural resources to bring about the increase has not been sustainable, and an increasing amount of the food consumed is imported from outside Asia—a trend that is projected to continue. In Africa, food consumption per capita has not increased significantly during the past 30 years and degradation of natural resources is widespread. High energy prices are putting pressure on food systems through increasing demand for biofuels, and large food price increases during 2007–08 caused serious hardship for millions of poor people. Food riots in more than 30 countries have threatened the legitimacy of governments. Agricultural trade policies pursued by the United States, the European Union, and Japan are adversely affecting poverty and food insecurity in developing countries. At the same time, modern science—including molecular biology—and globalization offer new and exciting opportunities for the sustainable agricultural development needed for poverty alleviation.

Food policy is a plan of collective action intended to influence and determine decisions, actions, behavior, and perceptions to enable people to achieve certain objectives. More specifically, food policy consists of the setting of goals for the food system or its parts, including natural resources (such as soils, water, and biodiversity), production (crops and animals), processing, marketing, food consumption (including food safety) and nutrition (including nutrition-related health), and the processes for achieving these goals at a local, national, regional and global level. By setting regulations or changing incentives for different stakeholders, food policy shapes the structure and functioning of the food system in the direction of the intended goals. Government action is likely to include conflicting goals and policy measures that may contradict each other. Furthermore, few governments pursue a consistent set of goals for policy intervention over time.

The reasons for food policies vary from country to country and can change over time. But since food fulfills a basic human need, providing sufficient food of adequate nutritional quality for each individual has been the most important of all food policy objectives over time. In addition to this, modern food policy includes objectives such as farm income support, economic growth, poverty reduction, and equality as well as environmental protection.

Several patterns of food policy are common across countries, irrespective of their cultural, historical, or sociological heritage or geographical location. There exists a general tendency to discriminate against farming in poor countries and to subsidize farmers in rich countries. In addition, developing countries tax agriculture mostly through indirect means (e.g., overvalued exchange rates and import barriers on inputs into agriculture) rather than direct means (e.g., price controls via parastatal organizations), while sectors with comparative advantage are taxed more heavily (e.g., plantation-based export sectors vs. small-holder import-competing agriculture). To understand these patterns, or more generally why governments do as they do with respect to food, a careful analysis of food policy is necessary.

Food policy-makers and those attempting to influence them are a heterogeneous group of people including primarily representatives of many agencies within a government and representatives of civil society and private groups outside government. The process of making food policy is usually an inter-agency one, the head of state and the ministry of finance playing a key role in the allocation of public funds and the ministry of agriculture serving as the primary actor influencing production policies. Other agencies serve as the primary actors on consumption, distribution, and trade policies. These other agencies typically include ministries of health, commerce, trade, and environment, as well as departments that deal with

drought relief and rehabilitation. Sometimes non-government organizations (NGOs) and the public in general can be influential in food policy making. Macroeconomic policies may have profound effects on the rural-urban terms of trade and the structure of incentives for food and agricultural production. The food policy of one country is often influenced by the policies (e.g., agricultural and trade policies) of other countries and international organizations. For example, developing countries sometimes resort to high tariffs as a coping strategy to deal with domestic agricultural subsidy policies in developed countries. Such inter-dependence in policy making often causes conflicts, as is exemplified by the highly confrontational positions taken on agriculture by developing and developed countries in agricultural trade negotiations. This has led to the creation and development of various international organizations. Key international actors in the food policy arena include the Food and Agricultural Organization (FAO), the World Bank, the International Monetary Fund (IMF), the Consultative Group on International Agricultural Research (CGIAR), the World Trade Organization (WTO), and the World Health Organization (WHO).[1]

The design and implementation of appropriate government policies for food systems depend on in-depth understanding of how the systems work and how they may be influenced by various policy measures. The case studies presented in these three volumes aim to help readers better understand the complexities of global, national, and local food systems and how the systems can be influenced by government policy and action by the private sector and civil society. Emphasis is on global food systems and food systems in developing countries. The cases are grounded in the principles of social entrepreneurship, an approach to the analysis, design, and implementation of action to improve food systems that involves hands-on, participatory training based on classroom presentations and discussions of cases of real policy-making situations within an analytical and conceptual learning environment.

[1] International food system governance is addressed further in chapters 9 and 10 of our forthcoming textbook and in the third volume of case studies.

The Social Entrepreneurship Approach as an Educational Tool

The literature defines social entrepreneurs and social entrepreneurship in various ways. We use the description provided by the Schwab Foundation: A social entrepreneur is "a pragmatic visionary who achieves large-scale, systemic, and significant social change through a new invention, a different approach, a rigorous application of known technologies or strategies, or a combination of these." Social entrepreneurship, then, is "about applying practical, innovative, and sustainable approaches that benefit society in general, with an emphasis on those who are marginalized and poor" and "a term that captures a unique approach to economic and social problems, an approach that cuts across sectors and disciplines."[2]

The term "social entrepreneur" is usually applied to individuals who design and implement programs with an immediate impact on specific population groups. Here it describes a mindset and a way to approach policy analysis, advice, and design, one that is well suited to the case study model. We believe that entrepreneurship education helps students become leaders, innovators, and creative problem solvers because it blends "real world experience with conceptual learning in the classroom." These volumes seek to help students develop these characteristics in order to simulate the real-world experience by bringing cases of real policy situations into the classroom.[3]

Social entrepreneurs have a social mission—in this case, to reduce poverty, hunger, and human misery in developing countries in a way that is sustainable over time. They see themselves as change agents, seeking to solve problems and exploit opportunities through innovative analysis and economically viable action by governments, the private sector, and civil society. They pursue action over rhetoric, and they focus on the creation of social value and public goods to compensate for market failures and poor people's inability to express their needs in terms of market demands. Policy recommendations made by

[2] http://www.schwabfound.org/whatis.

[3] Deborah H. Streeter, John P. Jaquette, Jr., and Kathryn Hovis, "University-wide Entrepreneurship Education: Alternative Models and Current Trends," Working Paper 2002-02 (Cornell University, Department of Applied Economics and Management, Ithaca, NY, 2002), p. 5.

the social entrepreneur (in this case, the student during and after the course) aim to change the underlying causes of problems, rather than the symptoms, by using new opportunities provided by modern science and technology, including molecular biology and digital technology, as well as new knowledge in the social sciences and opportunities offered by globalization. Building on the Schwab descriptions and material from several other institutions and individuals,[4] the cases emphasize these characteristics as integral to the social entrepreneurship approach.

By instilling social entrepreneurship thinking into your analyses, the cases encourage you to become a social entrepreneur or to use a social entrepreneurship approach in your future teaching and policy advice, design, and implementation.

The Cases

Each case is about a past, current, or expected future policy situation and is written by a professional with field experience relevant to the case. It focuses on a situation where policy alternatives exist and where policy lessons can be learned for use in future policy analysis, design, and implementation. The cases describe real policy-making environments and cover the key aspects of global food system policies, with an emphasis on food systems in developing countries. In addition to the necessary background information, each case presents policy issues and options, identifies the interests of each major stakeholder group, and provides an assignment to students.

These case studies are included in a three volume set that, together, cover policy aspects of the key components of the global food system from human health to international trade and macroeconomic policies. This volume contains cases related to macroeconomic and trade policies and institutions. Volume 1 contains cases related to health, nutrition, food security, and poverty policies and ethical issues. Volume 2 contains cases related to domestic market, production, and natural resource management policies. The cases are numbered (in parentheses) to coincide with the chapters of an accompanying textbook (to be available in 2010). Chapters 1 and 2 of the textbook are on general policy issues and contain no case studies. The cases in this volume relate to chapters 9 and 10 of the textbook.

By means of case studies published in the three volumes, as well as the accompanying textbook, the program aims to provide a comprehensive perspective of the role of government in the global food system with emphasis on developing countries and to strengthen university-level training to understand, analyze, advise, and make decisions about the system using an innovative, participatory approach.

The governments of most developing countries underinvest in public goods for the food system. Particularly severe is the underinvestment in public goods in rural areas that are needed for agriculture to flourish. Chapters 1 (9-1) and 2 (9-2) of Volume 3 address the returns to such investments and provide policy options to help allocate public funds among competing demands. International institutions of great importance to global and national food systems are discussed in chapters 3 (9-3), 4 (9-4), and 6 (9-6), along with alternative policy interventions to improve these institutions. Chapter 5 (9-5) illustrates the potential and real conflicts among stakeholder groups with respect to the behavior of international institutions. A significant share of existing food security and poverty is a result of armed conflicts, which, in turn, are more likely to exist in situations of poverty and hunger. Policy issues and options related to this two-way causality between armed conflict on the one hand and poverty and food insecurity on the other hand is addressed in chapter 7 (9-7). Although most of the cases address meso- and microeconomic policies, macroeconomic policies such as exchange rate and money supply policies may have a great impact on food systems, as shown in chapter 8 (9-8).

How does globalization affect nutrition? Chapter 9 (10-1) identifies various pathways and suggests a series of policy options for governments and the private sector to consider in efforts to avoid negative and promote positive effects. Agricultural production and trade policies within the countries of the Organization for Economic Cooperation and Development (OECD) are playing an important role within the global food system. As illustrated by chapters 10 (10-2), 11 (10-3), 12 (10-4), and 13 (10-5),

[4] These sources include Ashoka, the Center for the Advancement of Social Entrepreneurship, the New Heroes, and the Kauffman Center for Entrepreneurial Leadership at Stanford University.

the consequences for low-income farmers in developing countries can be severe and the conflict of interest among the various stakeholder groups can be strong. Nonetheless, policy options are available for consideration by the OECD country governments and the World Trade Organization. As shown in chapter 14 (10-6), trade-distorting agricultural policies are not limited to OECD countries. Chapter 15 (10-7) discusses the influence of international agreements, such as the textile and clothing agreement, and options for changing their impact. Some advocates propose fair trade arrangements as a means to assure that primary producers capture a reasonable share of the consumer dollar. Such arrangements are analyzed in chapter 16 (10-8). Current trade-distorting agricultural policies include nontariff barriers and are accompanied by preferential treatment for some developing countries and tariff escalation for processed agricultural and food products. The consequences of these policies and related policy options are discussed in chapters 17 (10-9), 18 (10-10), and 19 (10-11).

The Classroom Activities

The cases and the textbook are designed to be used in a participatory social entrepreneurship teaching model. The social entrepreneurship thinking that will be promoted in the case analysis and discussion should be presented in a lecture during the first week of a course in which the cases are used, along with a set of guidelines on how to analyze the cases and prepare policy recommendations.

We would note that in our experience it is difficult to get full participation from all students in classes with more than 30 students.

A 50-minute class session may consist of a 15-minute presentation of a case and policy recommendations by a group of three students to whom the case was assigned at least one week before the class. Then a 25-minute general class discussion moderated by the instructor may follow, and the session may conclude with a 10-minute lecture that draws lessons from the case on the general topic being considered. For those cases where the assignment to students includes the development of recommendations for action by more than one stakeholder group, the three students may each present a stakeholder perspective for discussion in class. Further, to facilitate discussion and highlight stakeholder interests, the class may be divided into groups, each representing a stakeholder group in the general discussion. Each subtopic to be covered by cases will be introduced by the instructor in a lecture, which may be based on a chapter in the textbook. A 75-minute session would permit more discussion time.

Chapter One
Linkages between Government Spending, Growth, and Poverty in Uganda and Tanzania (9-1)
by Shenggen Fan

Executive Summary

This case study presents a synthesis of the links between government spending— in areas such as agricultural research and development (R&D), irrigation, rural education, and infrastructure (including roads, electricity, and telecommunications)— and economic growth and poverty reduction in Uganda and Tanzania. The findings of this case study are intended to help explain how government spending on key investments can help meet the broader policy goals of improved growth and poverty reduction through various channels. This study, using a common framework, seeks to broaden and deepen understanding of the mechanisms through which government investment results in pro-poor economic growth.

The overall picture for public investment can be summarized as follows:

- For Tanzania, the results of household survey data show that investments in agricultural research, roads, and education have large effects on income growth. No clear pattern distinguishes the measured impacts for high- and low-potential areas. In many high-potential areas, returns to investments are still high with no signs of diminishing marginal returns, which suggests that public investment has been insufficient in all regions. Nonetheless, the results demonstrate that there are opportunities to improve the growth and poverty impacts of total public spending through better regional targeting of specific types of investment
- For Uganda, district-level data show that government spending on agricultural research and extension had the largest impact on agricultural productivity, followed by spending on rural roads. Across regions, the study demonstrated that investments in the northern region (a poor region) have the potential to contribute the most to reducing poverty, whereas in the western region (a high-potential region), most types of investment have the potential to achieve the highest returns in improving agricultural productivity.

Your assignment is to recommend a public sector investment strategy for rural infrastructure to be considered by the government of one of the two countries discussed in this case.

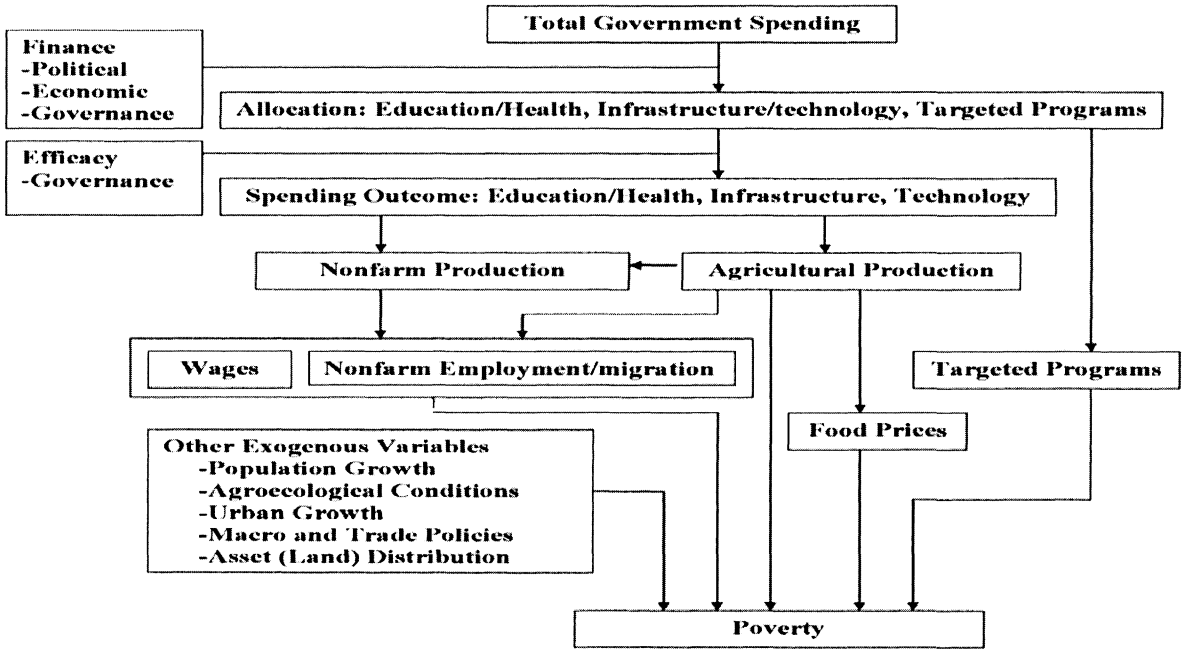
Background

Investment in Infrastructure, Technology, and Human Capital and Impact on Poverty: Conceptual Framework

The aim of this case study is to improve understanding of the relationship between government spending and poverty reduction through long-term growth by reviewing issues and synthesizing the findings of major studies from the International Food Policy Research Institute (IFPRI). As shown in Figure 1, public spending affects poverty reduction through different channels. Understanding these channels will enable policymakers to design more effective policies. This case study analyzes the differential impact not only on economic growth, but also on poverty reduction and regional inequality. Additionally, it distinguishes the effects by geographic region.

This case study considers public spending at different levels of government that leads to long-term growth from which the poor benefit. This type of spending is very different from targeted welfare or social safety net programs, which often help the poor in the short run. The case study first reviews a framework for assessing public investment for poverty reduction. Particular attention is paid to how public investment affects rural poverty through various channels. The study then illustrates how different types of public investment can have differential impacts. Finally, it discusses the policy issues and offers policy options for a public

Figure 1: Government Spending and Rural Poverty



investment strategy to achieve the twin goals of economic growth and poverty reduction.

How Does Public Investment Affect Rural Poverty?

Public investment affects rural poverty through many channels, as depicted in Figure 1. For example, public investment in agricultural research, rural education, and infrastructure increases agricultural productivity, which directly increases farmers' incomes and in turn reduces rural poverty. Indirect impacts come from higher agricultural wages and improved nonfarm employment opportunities induced by growth in agricultural productivity. Increased agricultural output from rural investment often leads to lower food prices, again helping the poor indirectly because they are often net buyers of food grains. Redistribution of land caused by higher agricultural growth also affects rural poverty. Public investments in rural education, health, and infrastructure not only have indirect effects on wages, nonfarm employment, and migration through increased productivity, but also directly promote rural wage increases, nonfarm employment, and migration, thereby reducing rural poverty. For example, improved infrastructure access will help farmers set up small rural nonfarm businesses such as food-processing and marketing enterprises, electronics repair shops, transportation and trade, and restaurants.

Investments in rural sectors not only contribute to growth, employment, and wages in rural areas, but also help the development of the national economy by providing labor, human and physical capital, cheaper food, and markets for urban industrial and service development. Growth in the national economy reduces poverty in both rural and urban sectors. Understanding these different effects provides useful policy insights for improving the effectiveness of national poverty reduction strategies. In particular, an understanding of these effects shows how public investment can be used to strengthen weak links between poverty reduction channels and thus to target public resources more efficiently. More efficient targeting has become increasingly crucial as many developing countries have committed to achieving poverty reduction goals using the Millennium Development Goal (MDG) framework with limited public resources.

Channels through Which Public Investment Affects Rural Poverty

Agricultural growth. This section will focus on evidence of the impacts of agricultural growth on poverty reduction for the following reasons: (1) the majority of the world's poor live in rural areas and a large share of their income comes from agriculture; (2) growth in agriculture contributes to poverty reduction indirectly through increased rural wages and farm and nonfarm employment; and (3) agricultural growth may also contribute to poverty reduction in urban areas by lowering food prices for urban residents and contributing to national economic growth.

The most remarkable evidence on the poverty reduction effects of agricultural growth probably comes from the Green Revolution in South Asia from the late 1960s to the 1980s. In the late 1960s, the incidence of rural poverty in India fluctuated widely between 50 and 60 percent. The Green Revolution, based on the widespread use of high-yielding varieties (HYVs) developed jointly by national and international agricultural research centers, began in the mid-1960s. Over the next two decades farmers' wheat and rice yields doubled, tripled, or even quadrupled. The incidence of rural poverty declined from 64 percent in 1966 to 34 percent in 1989.

There is also strong evidence of the effect of growth on poverty in rural China, which has seen a tremendous reduction in poverty over the past three decades. The number of poor declined from 260 million in 1978 to 26 million in 2004 (Ministry of Agriculture of China 2005). The fastest reduction occurred during the initial phase of rural reforms from 1978 to 1984, which was highly correlated with agricultural growth stemming from institutional and policy changes in agricultural production. Between 1984 and 1989, however, rural poverty began to rise and is attributed to stagnation of agricultural growth during this period. The Chinese evidence convincingly shows that whenever agricultural growth is strong, poverty falls rapidly, and whenever agricultural growth is lacking, poverty reduction is slow.

In summary, agricultural growth is conducive to poverty reduction. The patterns of growth, however, and its distributional impacts also matter. Better distribution of productive assets and more growth in the less-developed areas and in the small farm sector will foster more poverty reduction for the same rate of agricultural growth.

Rural wages. In the majority of developing countries, the bulk of poor people are either landless or live on small farms with inadequate land to meet their food needs. As such, they depend heavily upon the only available factor of production—labor. The poor gain from economic growth by increasing their productivity if they own land, by participating in the labor market, or both. For example, with the advent of the Green Revolution in India, the poor took advantage of extra labor demand and higher wages. Another factor of production—land—is also crucial in giving small-scale and landless farmers access to rural wages. Thiesenhusen and Melmed-Sanjack (1990) found that land distribution from large-scale farmers to small-scale farmers sharply increased family labor use per hectare and, to a lesser extent, labor hired per hectare.

Thus, improvement in wages has strong linkages to rural poverty. Public investment in infrastructure, health, and education promotes these wages by supporting agricultural productivity and nonfarm employment activities.

Nonfarm employment. Traditional rural households in developing countries are viewed mainly as agricultural producers and agricultural wage laborers. There is increasing empirical evidence, however, that rural households often diversify their activities, with nonagricultural sources of income often contributing significantly to household incomes. For the poor, different forms of nonfarm employment are a source of supplementary income and are ways to diversify and spread risk across a number of livelihood strategies. For the nonpoor, nonfarm activities are an avenue to generate more income and assets in addition to other factors of production such as land, capital, and technology.

Research shows that nonfarm activities are generally associated with reduced levels of absolute poverty. Newman and Canagarajah (2000) found that between 1988 and 1992 poverty reduction in Ghana can be attributed mainly to improvements in both average levels of income and the pattern of its distribution in the informal and nonfarm sectors in cities other than Accra and in rural areas outside Accra. Datt and Ravallion (1997) showed that growth in nonfarm output, in addition to growth in agricultural output, played an important role in reducing poverty across Indian states. The impact

of the nonfarm economy on inequality is less clear-cut. A recent study of Ecuador explores these questions directly (Elbers and Lanjouw 2001). One key finding is that irrespective of income inequality, employment shares in both high-productivity and low-productivity nonfarm activities are associated with sharply lower absolute poverty rates. Thus, although inequality and poverty are clearly related, they are not equivalent. The authors suggest that the high-productivity subsector acts as an engine of growth by lifting the poor out of poverty either directly or by generating higher wage rates, while the low-productivity subsector acts as a safety net that helps prevent more households from falling below the poverty line.

Migration. Public investment can have a large impact on both rural-to-rural and rural-to-urban migration. For example, the Green Revolution in South Asia was initially concentrated in irrigated regions and only later spread to more favorable rainfed areas. Technological change, therefore, can contribute to widening disparities between regions. Worse, if technology leads to lower production costs per unit of output in the adopting regions, producer prices may fall, leaving non-adopting regions with lower prices and stagnant yields, so that their incomes actually decline. Interregional migration acts to buffer these gaps and provides an efficient way of spreading the benefits to poorer regions with limited agricultural growth potential. In such instances, migrants leave their villages to settle permanently or temporarily in other parts of the country where there is a need for surplus labor or where there is a substantial increase in productivity.

Land distribution. Improving the asset base of the poor is viewed as one way to lift them out of poverty, and in a poor agrarian economy, this means improving their access to land. The relationship between agricultural growth and changes in land distribution has been debated over the past several decades. The consensus is that better land distribution through land reform not only improves income distribution and consequently poverty reduction, but also helps agricultural growth, which in turn alleviates poverty. The effect of agricultural growth on land distribution, however, has been less clear-cut. In fact, one of the earliest controversies about the Green Revolution concerned whether higher agricultural growth worsened land distribution.

Critics argue that large farm owners who had better access to irrigation water, fertilizers, seeds, and credit were the main adopters of new technologies and that smallholders were either unaffected or made worse-off because the Green Revolution resulted in lower product prices, higher input prices, and attempts by owners to increase rents or force tenants off the land. A recent study by Fan et al. (1999) using state-level data from India for several decades found that both the relationships—between poverty reduction and changes in land distribution and between agricultural growth and land distribution—have been very weak. The fact that agricultural growth did not contribute to worsening land distribution, however, does not mean that rural poverty is not correlated with land ownership. The rural poor are still either landless laborers or smallholders today. Therefore, future growth must be designed to benefit these landless or marginal landholding peasants.

Food prices. Public investment in rural areas can lead to an increase in aggregate agricultural output, and this increased output will in turn reduce food prices. This process has proved to be one of the most important ways through which rural and urban poor people are affected by public investment (Scobie and Posada 1978; Rosegrant and Hazell 2000; Fan et al. 2003). The impact of reduced food prices is particularly important for the urban poor because they often spend more than half of their income on food. These price reductions may not be very large in an open economy with low transport costs. Indeed, owing to recent market liberalization policies, many more countries now fall into this category than in the past. Many poor countries still face high transport costs, however, because of poor infrastructure, remoteness from world markets, or inefficient marketing institutions, and these countries may face considerably higher endogenous domestic prices even after market liberalization. For example, in many Asian countries, such as China and India, and in landlocked African countries, domestic prices still fall sharply when domestic food production increases suddenly. Furthermore, the prices of many traditional food crops also continue to be endogenously determined within countries because they are not traded on world markets.

The impact of reduced food prices on rural poverty is less clear-cut and depends largely on whether rural poor are net sellers or buyers of food.

The Case of Uganda

Background on growth and poverty. At independence in 1962, Uganda showed prospects for sustainable development with high growth and savings rates. The country had a well-developed education system and was running a trade surplus, thanks to its exports of agricultural and textile products. It was self-sufficient in terms of food, and small-scale industry supplied the domestic market with basic inputs. From the early 1970s until the mid-1980s, however, it suffered from political turmoil and economic mismanagement.

During the late 1980s and 1990s, the government introduced a series of economic reforms. First, liberalization of prices and trade in the domestic market boosted agricultural growth. Second, liberalization of foreign exchange and the trade system led to the diversification of Uganda's exports and improved the competitiveness of traditional agricultural products, such as coffee and tea, in external markets. The government also controlled the growth rate of the money supply, which led to price stability and helped restore confidence and external competitiveness (IMF 2000). As a result of these policies, the Ugandan economy outperformed most other countries in Sub-Saharan Africa. From 1982 to 1999, Uganda's economy grew at 5.2 percent a year, and this rate accelerated to 6.9 percent a year in the 1990s.

Trends in wages, employment, poverty, and inequality. Both agricultural and nonagricultural earnings are important sources of income for rural residents in Uganda. Data from Uganda's National Household Surveys show the following features: First, both agricultural and nonagricultural wages rose substantially between 1992/1993 and 1999/2000. Second, nonagricultural wages rose more than agricultural wages on average. Third, women were paid less than men in both sectors.

The number of new job entrants into Uganda's economy was about 306,500 people a year (MFPED 2000). Agriculture employed the majority of people—about 85 percent in most regions. The 1992/1993 National Household Survey showed that 6.7 percent of all households in rural areas in Uganda were engaged in nonfarm activities. Thus, it is likely that nonfarm employment could become an important avenue for supplemental income generation for poor people in rural Uganda.

Trends in public expenditures. Uganda's government expenditures in constant 1997 prices increased from 264 billion shilling in 1982 to 1,043 billion shillings in 1999, an annual growth rate of more than 8.4 percent. As a percentage of gross domestic product (GDP), Uganda consistently increased its spending during the 1980s, from 9 percent in 1980 to 16 percent in 1990 (Fan and Rao 2003). Total government revenue was 10–11 percent of GDP, and Uganda thus experienced a severe fiscal deficit in the 1990s. The analysis here focuses on public spending on agricultural R&D, roads, education, and health.

Data on public spending on agricultural research in Uganda are available only in the 1990s. Total spending on agricultural R&D was US$27 million in 1995, measured in 1993 prices, and increased to US$49 million in 2000 (Beintema and Tizikara 2002). As a percentage of agricultural GDP, agricultural research spending increased from 0.32 percent in 1995 to 0.5 percent in 2000. This percentage was much lower than the African average of 0.85 percent in 1995.

Uganda's mountainous and hilly topography hinders the development of roads, but the effects of economic growth and improved transport links were evident in improved access of *matatu* taxis. These taxis were on average within six kilometers of homes in 1999/2000, compared with nine kilometers in 1997. The 2000 service delivery survey found that 65 percent of communities held the view that public transportation had improved over the previous five years, largely owing to improved road maintenance.

Lack of electricity provision and access are major problems facing rural households in Uganda. Only 12 percent of villages and 2.1 percent of rural households have electricity connections. This rate is significantly lower than the rates achieved in China and India, for example, several decades ago.

Uganda has achieved tremendous success in containing the incidence of HIV/AIDS. The rate declined from more than 30 percent in early 1990s to less than 6 percent today (CIA 2003). In other areas of health care, however, Uganda has not performed well.

Although the infant mortality rate has declined, all other indicators, such as crude death and life expectancy, deteriorated over the period 1980–1999 as the result of an inefficient health management system. In 1993 the Ministry of Health (MOH) decentralized health care on the grounds

that local councils were better informed. These councils were so overwhelmed with the huge demand for services in rural areas, however, that they were unable to deliver the required services to the poor effectively. Because inputs did not reach the intended facilities, actual service delivery was often lacking despite nominally adequate funding.

The government has increased the budget allocation for primary health care through the Poverty Action Fund, whose purpose is to direct and monitor funds to improve the welfare of poor people. Another prominent feature of the health plan is to shift from tertiary and curative services to primary and preventive services.

The government's policy on education in the 1990s emphasized increasing access to primary education and economic opportunities for poor people. Since 1991/1992, expenditures on education have shifted from secondary or tertiary education toward primary education. Rural literacy improved across all regions in Uganda during 1991–1999. The Universal Primary Education (UPE) policy aims at providing free education to four children per family, and this policy led to a substantial increase in primary school enrollment, from 2.7 million students in 1996 to 6.6 million students in 1999. Dropout rates, however, remained high owing to lack of facilities and poor health of children.

Marginal returns to public investments. The marginal returns to different kinds of government expenditures were calculated in two steps. First, the marginal returns in agricultural output and poverty reduction per physical unit were calculated. Then the unit cost of these physical units—for example, shillings per kilometer of road—were calculated to determine the returns per unit of investment. The returns are measured as a ratio of shillings of agricultural output or the number of poor individuals brought out of poverty per unit of spending. The results are presented in Table 1.

Most of these government investments reduced poverty while increasing agricultural productivity. There were, however, sizable differences in production and poverty reduction gains among expenditure items and across regions. In terms of productivity effects, government expenditure on agricultural R&D had the highest returns, at 12 shillings per marginal shilling invested. Investments in feeder roads ranked second, with a benefit-cost ratio of about 7. Education also had positive returns, with a benefit-cost ratio of about 3. Health was the only government investment whose return was lower than its cost, at only 0.9 shillings per shilling spent.

Table 1: Marginal Returns to Government Investment in Rural Uganda

Investment	Central	East	North	West	Uganda
Benefit–cost ratio					
Agricultural R&D	12.49	10.77	11.77	14.74	12.38
Education	2.05	3.51	2.10	3.80	2.72
Feeder Roads	6.03	8.74	4.88	9.19	7.16
Murram Roads	n.s.	n.s.	n.s.	n.s.	n.s.
Tarmac Roads	n.s.	n.s.	n.s.	n.s.	n.s.
Health	1.37	0.92	0.37	0.96	0.90
Number of poor people reduced per million shillings					
Agricultural R&D	21.75	66.31	175.52	48.91	58.39
Education	3.57	21.60	31.38	12.62	12.81
Feeder Roads	10.51	53.85	72.82	30.49	33.77
Murram Roads	4.08	11.88	14.80	9.77	9.70
Tarmac Roads	2.59	13.12	62.92	9.39	9.73
Health	2.60	6.15	5.95	3.46	4.60

Source: Fan et al. 2004.
Note: n.s. indicates that the respective coefficients are not statistically significant.

In terms of poverty reduction, agricultural R&D again ranked first, followed by feeder roads. The effect of education on poverty was smaller than the effects of agricultural services and feeder roads. Government investment in health had the smallest impact on poverty reduction. For all types of investment except health, the northern region had the highest returns. The impacts of health expenditures on poverty were similar in the north and east. All types of investment had their smallest impacts on poverty in the central region.

Summarizing the Main Findings

Government spending on agricultural R&D improved agricultural productivity substantially and had the largest returns to growth in agricultural production. Agricultural R&D spending also had the largest impact on poverty reduction. In addition, government expenditures on rural roads had a substantial marginal impact on poverty reduction. Low-grade roads such as feeder roads had a larger impact than did high-grade roads such as murram and tarmac roads. The effect of education ranked after agricultural R&D and feeder roads. These poverty reduction effects came from growth in agricultural productivity, improved nonfarm employment, and increased rural wages.

Government spending on health did not have a large impact on agricultural productivity growth or rural poverty reduction. The main reasons for this result could be that (1) health investments affect growth and poverty reduction only in the long run; (2) a large share of health expenditures went toward prevention and treatment of HIV/AIDS-related diseases, which had obvious significant impacts only in the long run; and (3) the Ugandan health system contained significant inefficiencies.

The Case of Tanzania

Background on macroeconomic reforms, growth, and poverty. Before its recent policy reforms, Tanzania pursued a policy of economic growth under the political ideology of Ujamaa, or African socialism. During the mid-1980s the country began undertaking major macroeconomic policy reforms to create the macroeconomic stability required for achieving sustained economic growth. The reforms called for rationalization of government spending and more conservative fiscal policies, including removal of some government subsidies to sectors like agriculture.

As a result of these macroeconomic reforms, the country has experienced a significant improvement in its economic indicators. Inflation declined from 30 percent in 1995 to 4.4 percent in 2004; foreign exchange reserves increased from 6 weeks of merchandise imports in 1995 to 18 weeks in 2002; and GDP grew by 5.2 percent in 2004, up from 2.6 percent in 1995.

In spite of these achievements, the decline in poverty has been disappointing, especially in rural areas. The household surveys show that poverty declined by only 3 percent during the 1990s (from 39 percent to 36 percent). The failure to reduce poverty has raised concerns about the effectiveness of the reforms in improving the welfare of Tanzanians, particularly in rural areas. In 2001 the Government of Tanzania adopted a medium-term strategy for poverty reduction, which envisaged increasing public investments in strategic social sectors such as basic education, primary health care, rural roads, water supply, agricultural research and extension, and HIV/AIDS.

Trends in government spending and public capital. Total government expenditures increased from 326 billion shillings in 1986 to 602 billion shillings (measured in 1985 constant prices) in 1999. Since GDP grew at about the same rate, public spending as a share of GDP remained almost unchanged at 17 percent. Spending on social services grew the fastest, at an annual rate of 9 percent. As a result, its share in total government expenditure grew from 14 percent in 1986 to 25 percent in 1999. Spending on economic services (such as agriculture, infrastructure, and industrial development) was erratic, however, increasing from 64 billion shillings in 1986 to 135 billion shillings in 1995, and then declining to 36 billion shillings in 1996.
Agriculture spending accounted for only 4 percent of total government spending in 1998, down from 5.8 percent in 1986. This trend is disturbing despite the fact that the government made agriculture a high priority. Agricultural R&D expenditures in Tanzania doubled between 1996 and 2000 in constant dollars, and as a percentage of agricultural GDP, agricultural R&D spending increased from a low of 0.2 percent in 1996 to 0.4 percent in 2000.

Total government expenditures on education increased from 22 billion shillings in 1986 to 82 billion shillings in 1999 in constant prices. As a percentage of GDP, they rose from 0.9 percent in 1988 to 2.3 percent in 1999. As a share of total expenditures, they increased gradually from 6.9

percent in 1986 to 14 percent in 1999. This share compares favorably with other African countries, which averaged 15 percent in 1998 (Fan and Rao 2003).

In terms of educational outcomes, there has been some improvement in the levels of education attained in recent years. The number of people who had completed primary school increased from 60.9 percent to 62 percent for males and 51 percent to 54.3 percent for females between 1992 and 1996.

Health expenditures increased from 14.6 billion shillings in 1986 to 39.2 billion shillings in 1999, in constant prices. In terms of health outcomes, the average life expectancy at birth for Tanzanians increased from 40.7 years in 1960 to 50 years in 1990. It declined to 48 years by 2000 owing to the rapid increase in the prevalence of HIV/AIDS. The child mortality rate also declined substantially in most regions. The number of child deaths under five years of age was 244 per 1,000 infants in 1975 and declined to 169 deaths in 1995. Lack of availability of health services is also a critical problem in Tanzania. In 2000/2001, people in most regions had to travel at least 10–30 kilometers to reach the nearest hospital.

Public expenditures on roads and transport systems increased over the years, but the total length of available roads remained low. Rural roads accounted for more than 60 percent of the total road length, and less than 1 percent of rural roads are paved. There is large variation in access to road infrastructure.

Marginal returns to physical public capital. The returns to investment are shown in Table 2. For every shilling invested in education by the government, household income increased by 9 shillings on average. This is the benefit/cost (B/C) ratio for the country as a whole. The B/C ratios were large for all zones, ranging from 5.8 in the southern coast and northern zones to 14 in the western zone.

At the national level, the B/C returns to road investment were similar in magnitude to those for education. Every shilling invested by the government increased household income by 9.13 shillings. The regional differences are large, however, with the largest returns arising in the south highlands and the central and western areas.

For every shilling spent on agricultural research, average household income rises by 12.5 shillings. This is the largest B/C ratio among all investments. The regional differences for agricultural research spending are also large, with the central zone having the largest return, followed by the southern coast, Lake Victoria, and south highlands. The northern coast and the western areas had negative returns.

Table 3 presents the estimates of the number of poor households that would be lifted out of poverty for every 1 million shillings invested. The results show that on average, another 1 million shillings of investment in education will lift 43 people out of poverty. This is larger than the number of people lifted out of poverty for a similar investment in agricultural research or roads.

For roads, every 1 million shillings invested would lift 27 poor people out of poverty. Road investments had differential effects on poverty across regions. Although roads had large poverty impacts in the central and western regions and in the south highlands, they had negligible poverty impacts in the northern zone and Lake Victoria.

Investments in agricultural research were almost as beneficial for the poor as similar investments in education. They did not, however, have a significant impact on poverty in the northern coast and western zones.

Summarizing the Main Findings

Despite some recent improvements in Tanzania's economic performance, poverty remains widespread and shows few signs of diminishing. Thus, additional investments in rural education can have very favorable impacts on poverty, raising about 43 people above the poverty line per million shillings spent. Given that education investments lead to sizable increases in per capita income, with an average B/C ratio of 9, increased investments in education should be a priority in all regions of the country.

Rural road investments also have a large impact on per capita incomes, with an average B/C ratio of 9.13. Their impact on poverty per shilling spent, however, is about half that of investments in education. The poverty and growth impacts are most favorable in the south highlands and central and western zones and least favorable in the northern parts of the country. Regional targeting is therefore appropriate.

Table 2: Returns to Investment per Shilling Invested in Tanzania, 2000/2001

Zone	*Education*	*Roads*	*Agricultural Research*
Northern Zone	5.81	1.78	9.23
Northern Coast	13.41	0.18	n.s.
Lake Victoria	9.50	n.s.	15.79
Western Zone	14.01	12.00	n.s.
Central Zone	8.66	14.22	46.92
South Highlands	7.71	19.73	14.69
Southern Coast	5.75	0.92	21.51
Average	9.00	9.13	12.46

Source: Fan et al. 2005.
Note: n.s. indicates statistically not significant.

Table 3: Poverty Reduction per Million Shillings Invested in Tanzania, 2000/2001

Zone	*Education**	*Roads**	*Agricultural Research**	*Electricity***
Northern Zone	18.23	1.86	16.54	28,003
Northern Coast	30.02	0.56	n.s.	75,479
Lake Victoria	43.40	n.s.	57.03	379,323
Western Zone	91.49	65.72	n.s.	87,400
Central Zone	54.56	74.60	81.13	150,715
South Highlands	26.48	60.37	21.38	108,915
Southern Coast	29.91	13.78	40.91	93,278
Average	43.10	26.53	40.39	141,962

Source: Fan et al. 2005.
Note: n.s. indicates statistically not significant. * denotes the number of poor reduced per million shillings. ** denotes the number of poor reduced for 1 percent increase in connection.

Investments in agricultural research also have large impacts on rural poverty and the largest impact on incomes, with an average B/C ratio of about 12. Again, regional targeting is important because the impacts are different across regions.

Policy Issues

Given that significant increases in public rural investments seem unlikely, countries will have to focus on using their public investment resources more efficiently. This effort requires better targeting of investments to achieve growth and poverty alleviation goals, and improved efficiency within the agencies that provide public goods and services. Despite vast differences in economic systems, natural sources endowments, socio-economic conditions, and sizes, these case studies offer some important lessons.

First, governments in Africa need to increase their investments in agriculture and rural areas. Agriculture accounts for 30–40 percent of the national economy, but its share in the total government budget is only about 4 percent. In contrast, Asian countries often spent 10–15 percent of their total government budget on agriculture during their Green Revolution period (Fan and Rao 2003). Lower productivity and lack of access to infrastructure and markets in Africa today are due to the governments' failure to invest adequately in rural infrastructure, education, and agricultural research and extension.

Second, African governments also need to set the right priorities in allocating their limited public resources to maximize their impact on growth and poverty reduction. Evidence from the cases presented here clearly shows that more investment in agricultural R&D, rural education, and rural

roads have high returns in terms of both growth and poverty reduction.

Third, unlike China and India, many African countries have not invested fully in their high-potential areas and hence have not yet reached the point of diminishing returns. Preliminary evidence from Uganda has shown that its high-potential areas will continue to be the major breadbaskets for the region, and agricultural productivity will need to increase further in these areas to provide much of the additional food needed to supply growing urban populations. But because large numbers of the rural poor do not live in high-potential areas, it will be important to make sufficient investments in less-favored areas as well.

Stakeholders

The previous sections have highlighted the importance of investments in rural infrastructure and other key public services that are necessary for achieving growth and reducing poverty in rural areas. The challenge for many developing countries is to find more effective ways to pay for additional public investments and to develop suitable institutional arrangements for their delivery. This section discusses the institutional reforms that could make delivery of infrastructure services more efficient and considers the potential role of the private sector.

The Public Sector

In most countries the public sector is the dominant supplier of infrastructure services. The results have generally been disappointing in Africa. The state-owned monopoly on provision of infrastructure has resulted in high levels of waste and inefficiency (Brook and Smith 2001). According to one estimate, in the early 1990s technical inefficiencies in power, roads, railways, and water alone led to losses of US$55 billion a year—equivalent to 1 percent of all developing countries' GDP, a quarter of annual infrastructure investment, and twice the annual development finance necessary for infrastructure (World Bank 1994).

At present policy makers interested in expanding access to infrastructure services in remote rural areas can draw on a rich body of experience that challenges existing ideas. Governments must address the question of how infrastructure services are paid for, which centers on pricing issues. Second, for delivering services to the poor, governments should allow for a range of service options in developing private participation schemes. Third, encouraging competition can help reduce prices and expand access and thus should be used to the maximum extent feasible. Fourth, the quality of regulation matters, and regulatory frameworks must be credible to investors and viewed as serving consumers. Finally, the politics of all of actions matters. Although technocratic solutions may exist, building consensus and trust and ensuring support for these policies will remain challenging.

The key questions to ask when allocating public expenditures and designing institutional reforms include the following:

- Are market failures being tackled? If so, which ones, and how?
- Are public expenditures for the sector adequate in addressing the sector's issues?
- Are distributive concerns being addressed by narrowly based targeting mechanisms?
- Are services being provided efficiently, at least cost, and are they responsive to user demand?
- Is there any way to reform the recurrent cost funding mechanism?

The Private Sector

A global trend toward liberalizing and privatizing infrastructure activities began in the early 1980s and was strengthened in the 1990s. Developing countries have at the forefront of this movement, motivated by the desire to increase the efficiency of service delivery, accelerate the expansion of improved services, and bring a greater and more consistent consumer focus to service delivery (Brook and Smith 2001).

Between 1990 and 2000, private infrastructure projects in developing countries attracted more than US$680 billion of investment (World Bank 2007). Privatization can be an effective way to improve efficiency, because private firms are more responsive to end-user needs. Privatization also encourages and facilitates the imposition of cost-covering tariffs or user fees, thus addressing the problems of underpricing that vex many public sector enterprises. Greater efficiency and cost recovery allow firms to make investments and provide services that might not otherwise have been possible (Fan 2004). They simultaneously

improve efficiency and the government's fiscal condition by making available the same quality and quantity of services with smaller budgetary subsidies.

Although some results of private sector intervention in providing infrastructure services are potentially positive, empirical testing remains difficult because ownership reforms in infrastructure usually take place in a context of broader economic reforms. Additionally, many infrastructure privatization programs are relatively recent, limiting the availability of time-series data to test propositions about poverty impact. Based on the broad experience, however, it is evident that whether ownership reforms systematically expand access will depend critically on their detailed design (Estache et al. 2000).

The critical question that remains is, what strategies should government follow in focusing on reforms and pursuing private provision? One possible course of action might be to delay introducing private participation to allow time for market ideology to improve and to boost the performance of inefficient public sector enterprises, thus making them more attractive to potential bidders.

This approach has several potential drawbacks. First, it has often proven difficult, if not impossible, to improve the performance of public sector enterprises. The private sector has demonstrated that even in very difficult environments (for example, the power sector in Georgia), it can substantially improve efficiency and quality of service. Relying on public provision can increase the pressure to adopt a more rational pricing policy for infrastructure, which will not only increase efficiency, but also increase reliance on funding from taxpayers rather than users. This situation may reduce the resources available to invest in expanding services for the rural poor, which in turn has implications for poverty reduction and economic growth. Second, because the private sector can be reluctant to place its capital at risk in developing-country infrastructure projects, governments may pursue options such as leases and management contracts. Management contracts, however, are often short term and may not lock in efficiency and productivity improvements.[1] Moreover, because the private sector typically does not finance investment, approaches such as management contracts provide fewer pressures on them to commit to cost-covering tariffs. Thus, there should be some realism about the likely impact and benefits of these types of private participation schemes.

Whatever policies countries choose, governments cannot avoid the most important reality that infrastructure services must be paid for, whether the provision is public or private. The real issue regarding infrastructure provision in developing countries is not whether it is public or private, but whether less infrastructure or more will be provided.

The Role of Communities in Infrastructure Provision

Poor people and communities in developing countries are often viewed as beneficiaries or passive targets of interventions. They can, however, play a major role in improving physical access to services, and government agencies need to understand that the role of poor people goes beyond participation in public consultations.

The financial reality in many developing countries is that communities have no choice but to get involved in improving roads, ports, and bridges. Thus, community ownership and management of these types of infrastructure is a viable way of providing sustainable access to all. Some strong evidence shows that when communities voluntarily own and manage infrastructure, the cost of maintenance is significantly lower than when the same type of infrastructure is owned and managed by a public sector enterprise.

Policy Options

Future investments in public infrastructure require sustained efforts over a considerable period of time to develop stable and competent public sector institutions that support market development and address market failures. Several policy options can contribute to attaining the objectives already described.

[1] For example, the Northern Electric Company in Namibia saw a major reduction in losses during a five-year private management contract. Management was then taken back by the public sector, however, and it was not evident that the utility would maintain its efficient performance.

Investing Resources More Efficiently

Returns to public investments vary drastically across different regions and types of investment, even within the same country. This reality implies that there is great potential for more growth and poverty reduction even with the same amount of investment if these public resources can be allocated optimally. For governments to make sound investment decisions that make efficient use of their resources, information on the marginal effects of various types of government spending is crucial. Without such information, it is difficult for governments to home in on investment priorities that will achieve national development goals. It is important therefore to include all (or most) types of public investment when assessing their impact on growth and poverty reduction. To date, very few studies have done so.

The limited evidence from Uganda and Tanzania suggest that investments in agricultural R&D, rural education, and infrastructure have large returns, not only in terms of growth, but also in terms of poverty reduction. The regional disaggregated analysis indicates that in both high- and-low potential areas, returns to investments are still high in Africa, suggesting that more investment is needed across all types of regions in Africa.

Concluding Remarks

Agricultural R&D, rural education, infrastructure, and other rural services are critical to agricultural development and poverty reduction. Many developing countries, especially in Africa, have woefully inadequate levels of agricultural R&D, rural infrastructure, and human capital, and these gaps are major constraints to their development. Despite this fact, many governments and donor agencies have reduced investment levels in these areas in recent years. This case study demonstrates that this trend is imprudent. Many public investments in rural areas give high rates of return in Africa, as well as making important contributions to reducing rural poverty. Spending on rural roads, agricultural research, and rural education are some of the best win-win investments.

At the same time, developing countries need to improve the efficiency with which most of these public goods and services are supplied. Meeting this goal will require new institutional reforms, new forms of financing arrangements, and partnerships with private and other nongovernmental agencies. Since developing countries differ in their levels of economic development and in the capacities of their government agencies at various levels, it is important to determine the appropriate degree of centralization or decentralization and private sector participation for each country.

Assignment

Your assignment is to recommend a public sector investment strategy for rural infrastructure to be considered by the government of one of the two countries discussed in this case.

Additional Readings

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Chapter Two
Linkages between Government Spending, Growth, and Poverty in India and China (9-2)
by Shenggen Fan

Executive Summary

The objective of this case study is to present a synthesis of the links between government spending—in areas such as agricultural research and development (R&D), irrigation, rural education, and infrastructure (including roads, electricity, and telecommunications)—and economic growth and poverty reduction in China and India. The findings of this case study are intended to help explain how government spending on key investments can help meet the broader policy goals of improved growth and reduction in poverty through various channels. The study, using a common framework, seeks to broaden and deepen understanding of the mechanisms through which government investment results in pro-poor economic growth.

The overall picture for public investment can be summarized as follows:

- Using state-level data for India over time, the study found that many types of government spending have resulted in reductions in rural poverty, and most have also contributed to growth in agricultural productivity. Different kinds of spending, however, have different effects on poverty and productivity. Rural roads and agricultural research have the largest impact on agricultural growth and poverty reduction. Many investments in rainfed areas of eastern India offer the largest impact on rural poverty, but also contribute to higher growth in comparison with investments in the more-favored irrigated areas.
- Using provincial data over time, the study shows that for China, government investment in agricultural R&D and rural education have had the largest impact on both growth and poverty reduction. To eliminate the remaining poverty in China, the government should place the highest priority on public investment in western China, where the majority of the poor reside, because the marginal returns to public investments, in terms of poverty reduction, are higher there than in other regions.

Your assignment is to recommend a public sector investment strategy for rural infrastructure to be considered by the government of one of the two countries discussed in this case.

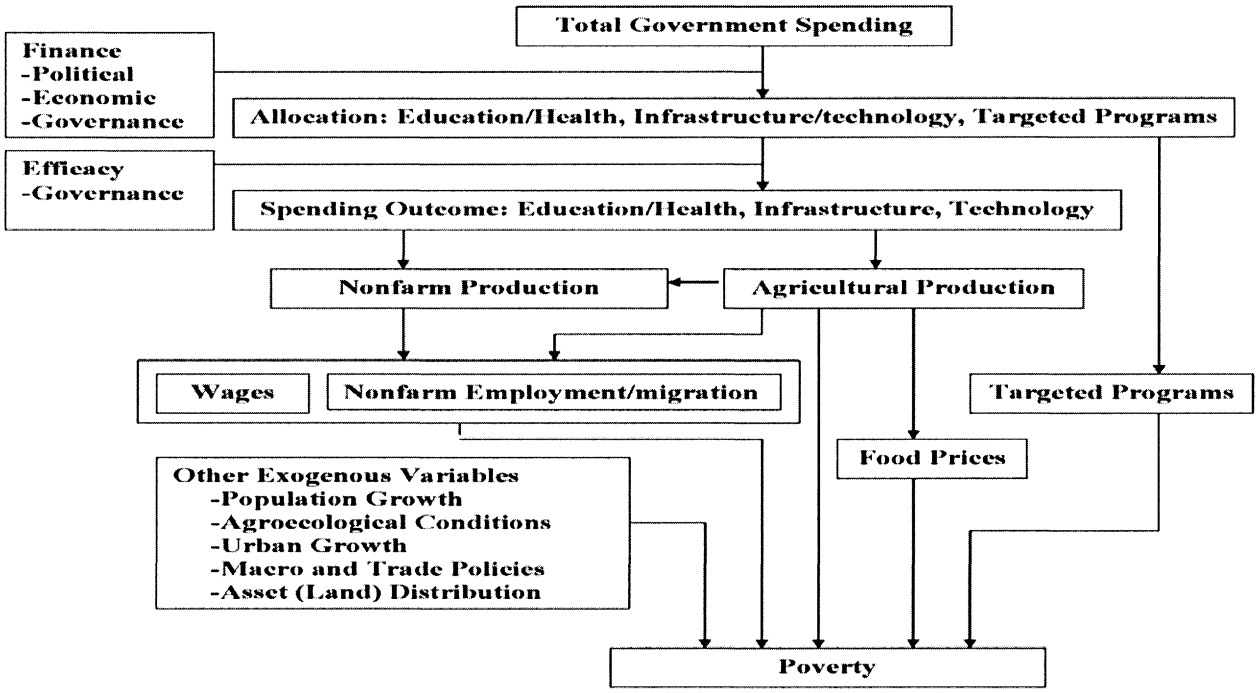
Background

Investment in Infrastructure, Technology, and Human Capital and Impact on Poverty: Conceptual Framework

The aim of this case study is to improve understanding of the relationship between government spending and poverty reduction through long-term growth by reviewing issues and synthesizing findings of major studies from the International Food Policy Research Institute (IFPRI). As shown in Figure 1, public spending affects poverty reduction through different channels. Understanding these channels will enable policymakers to design more effective policies. This case study analyzes the impact of differential spending and investment strategies not only on economic growth, but also on poverty reduction and regional inequality. Additionally, it distinguishes the effects by geographic region.

This case study considers public spending at different levels of government that leads to long-term growth through which the poor benefit. This type of spending is very different from targeted welfare or social safety net programs. This case study first reviews a framework for assessing public investment for poverty reduction. Particular attention is paid to how public investment affects rural poverty through various channels. This study then uses selected case studies to illustrate how different

Figure 1: Government Spending and Rural Poverty



types of public investment can have differential impacts. Finally, this paper discusses the policy issues and offers policy options for a public investment strategy to achieve the twin goals of economic growth and poverty reduction.

How Does Public Investment Affect Rural Poverty?

Public investment affects rural poverty through many channels, as depicted in Figure 1. For example, public investment in agricultural research, rural education, and infrastructure increases agricultural productivity, which directly increases farmers' incomes and reduces rural poverty. Indirect impacts come from higher agricultural wages and improved nonfarm employment opportunities induced by growth in agricultural productivity. Increased agricultural output from rural investment often leads to lower food prices, again helping the poor indirectly because they are often net buyers of food grains. Redistribution of land caused by higher agricultural growth also affects rural poverty. Public investments in rural education, health, and infrastructure not only have indirect effects on wages, nonfarm employment, and migration through increased productivity, but also directly promote rural wage increases, nonfarm employment, and migration, thereby reducing rural poverty. For example, improved infrastructure access will help farmers set up small rural nonfarm businesses such as food-processing and marketing enterprises, electronics repair shops, transportation and trade, and restaurants.

Investments in rural sectors not only contribute to growth, employment, and wages in rural areas, but also help the development of the national economy by providing labor, human and physical capital, cheaper food, and markets for urban industrial and service development. Growth in the national economy reduces poverty in both rural and urban sectors. Understanding these different effects provides useful policy insights for improving the effectiveness of national poverty reduction strategies. In particular, an understanding of these effects shows how public investment can be used to strengthen weak links between poverty reduction channels and thus to target public resources more efficiently. More efficient targeting has become increasingly crucial as many developing countries have committed to achieving poverty reduction goals using

the Millennium Development Goal (MDG) framework with limited public resources.

Channels through Which Public Investment Affects Rural Poverty

Agricultural growth. This section will focus on the evidence of poverty reduction impacts of agricultural growth for the following reasons: (1) the majority of the world's poor live in rural areas and a large share of their income is derived from agriculture; (2) growth in agriculture contributes to poverty reduction indirectly through increased rural wages and farm and nonfarm employment; and (3) agricultural growth may also contribute to poverty reduction in urban areas by lowering food prices for urban residents and contributing to national economic growth.

The most remarkable evidence on the poverty reduction effects of agricultural growth probably comes from the Green Revolution in South Asia from the late 1960s to the 1980s. In the late 1960s, the incidence of rural poverty in India fluctuated widely between 50 and 60 percent. The Green Revolution, based on the widespread use of high-yielding varieties (HYVs) developed jointly by national and international agricultural research centers, began in the mid-1960s. Over the next two decades farmers' wheat and rice yields doubled, tripled, or even quadrupled. The incidence of rural poverty declined from 64 percent in 1966 to 34 percent in 1989.

There is also strong evidence of the effect of growth on poverty in rural China, which has seen a tremendous reduction in poverty over the past three decades. The number of poor declined from 260 million in 1978 to 26 million in 2004 (Ministry of Agriculture of China 2005). The fastest reduction occurred during the initial phase of rural reforms from 1978 to 1984, which was highly correlated with agricultural growth stemming from institutional and policy changes in agricultural production. Between 1984 and 1989, however, rural poverty began to rise and is attributed to stagnation of agricultural growth during this period. The Chinese evidence convincingly shows that whenever agricultural growth is strong, poverty falls rapidly, and whenever agricultural growth is lacking, poverty reduction is slow.

In summary, agricultural growth is conducive to poverty reduction. The patterns of growth, however, and its distributional impacts also matter. Better distribution of production assets and more growth in the less-developed areas and in small farm sectors will foster more poverty reduction for the same rate of agricultural growth.

Rural wages. In the majority of developing countries, the bulk of poor people are either landless or live on small farms with inadequate land to meet their food needs. As such, they depend heavily upon the only available factor of production—labor. The poor gain from economic growth by increasing their productivity if they own land, by participating in the labor market, or both. For example, with the advent of the Green Revolution in India, the poor took advantage of extra labor demand and higher wages. Another factor of production—land—is also crucial in giving small-scale and landless farmers access to rural wages. Thiesenhusen and Melmed-Sanjack (1990) found that land distribution from large-scale farmers to small-scale farmers sharply increased family labor use per hectare and, to a lesser extent, labor hired per hectare.

Thus, improvement in wages has strong linkages to rural poverty. Public investment in infrastructure, health, and education promotes these wages by supporting agricultural productivity and nonfarm employment activities.

Nonfarm employment. Traditional rural households in developing countries are viewed mainly as agricultural producers and agricultural wage laborers. There is increasing empirical evidence, however, that rural households often diversify their activities, with nonagricultural sources of income often contributing significantly to household incomes. For the poor, different forms of nonfarm employment are a source of supplementary income and are ways to diversify and spread risk across a number of livelihood strategies. For the nonpoor, nonfarm activities are an avenue to generate more income and assets in addition to other factors of production such as land, capital, and technology.

Research evidence shows that nonfarm activities are generally associated with reduced levels of absolute poverty. Newman and Canagarajah (2000) concluded that between 1988 and 1992 poverty reduction in Ghana can be attributed mainly to improvements in both average levels of income and the pattern of its distribution in the informal and nonfarm sectors in cities other than Accra and in rural areas outside Accra. Datt and Ravallion (1997) showed that growth in nonfarm output, in addition

to growth in agricultural output, played an important role in reducing poverty across Indian states. The impact of the nonfarm economy on inequality is less clear-cut. A recent study of Ecuador explores these questions directly (Elbers and Lanjouw 2001). One key finding is that irrespective of income inequality, employment shares in both high-productivity and low-productivity nonfarm activities are associated with sharply lower absolute poverty rates. Thus, although inequality and poverty are clearly related, they are not equivalent. The authors suggest that the high-productivity subsector acts as an engine of growth by lifting the poor out of poverty either directly or by generating higher wage rates, while the low-productivity subsector acts as a safety net that helps prevent more households from falling below the poverty line.

Migration. Public investment can have a large impact on both rural-to-rural and rural-to-urban migration. For example, the Green Revolution in South Asia was initially concentrated in irrigated regions and only later spread to more favorable rainfed areas. Technological change, therefore, can contribute to widening disparities between regions. Worse, if technology leads to lower production costs per unit of output in the adopting regions, producer prices may fall, leaving non-adopting regions with lower prices and stagnant yields, so that their incomes actually decline. Interregional migration acts to buffer these gaps and provides an efficient way of spreading the benefits to poorer regions with limited agricultural growth potential.

In such instances, migrants leave their villages to settle permanently or temporarily in other parts of the country where there is a need for surplus labor or where there is a substantial increase in productivity. In India many people, both landless and landowning, came to Haryana and Punjab from neighboring states such as Bihar because of the increased productivity of high-yielding crop varieties and the subsequent increase in labor demand. In the case of this so-called seasonal migration, these migrants would then return to their own villages. It is estimated that the Green Revolution led to seasonal migration of more than a million agricultural workers each year from the eastern states to Haryana and Punjab (Westley 1986).

Similarly, in China, it is estimated that there were more than 150 million rural migrants working in various urban sectors in 2004, whereas this number was negligible 20 years ago (Ministry of Agriculture of China 2005). Such a large-scale relocation of population has reduced the large number of poor in rural areas and contributed to much of the rapid economic growth of the past three decades. The migration from rural to urban areas and from agricultural to nonagricultural sectors in rural China accounted for 14 percent of total poverty reduction and an even larger share of income growth in rural China from 1978 to 1997.

Land distribution. Improvement in the asset base of the poor is viewed as one of the ways to lift them out of poverty, which in a poor agrarian economy means improving access to land. The relationship between agricultural growth and land distribution has been debated over the past several decades. The consensus is that better land distribution through land reform not only improves income distribution, and consequently poverty reduction, but also helps agricultural growth, which in turn alleviates poverty. The effect of agricultural growth on land distribution, however, has been less clear-cut. In fact, one of the earliest controversies about the Green Revolution concerned whether higher agricultural growth worsened land distribution.

Critics argue that large farm owners who had better access to irrigation water, fertilizers, seeds, and credit were the main adopters of new technologies and that smallholders were either unaffected or made worse off because the Green Revolution resulted in lower product prices, higher input prices, and attempts by owners to increase rents or force tenants off the land. A recent study by Fan, Hazell, and Thorat (1999) using state-level data from India for several decades found that both relationships—between changes in poverty and land distribution, and between agricultural growth and changes in land distribution—have been very weak. The fact that agricultural growth did not contribute to worsening land distribution, however, does not mean that rural poverty is not correlated with land ownership. The rural poor are still either landless laborers or smallholders today. Therefore, future growth must be ensured to benefit these landless or marginal landholding peasants.

Food prices. Public investment in rural areas can lead to an increase in aggregate agricultural output, and this increased output will in turn reduce food prices. This process has proved to be one of the most important ways through which rural and urban poor people are affected by public investment (Scobie and Posada 1978; Fan, Fang, and Zhang 2003; Fan 2003). The impact of reduced

food prices is particularly important for the urban poor, who often spend more than half of their income on food. These price reductions may not be very large in an open economy with low transport costs. Indeed, owing to recent liberalization policies, many more countries now fall into this category than previously. Nonetheless, many poor countries still face high transport costs because of poor infrastructure, remoteness from world markets, or inefficient marketing institutions, and these countries may face considerably higher endogenous domestic prices even after market liberalization. For example, in many Asian countries, such as China and India, and in landlocked African countries, domestic prices still fall sharply when domestic food production increases suddenly. Furthermore, the prices of many traditional food crops also continue to be endogenously determined within countries because they are not traded on world markets.

The impact of reduced food prices on rural poverty, however, largely depends on whether the rural poor are net sellers or buyers of food. In the case of China, the majority of the rural poor are net sellers of food. Fan, Zhang, and Zhang (2004) found a strong relationship between lower food prices and higher rural poverty in China. In this case, the lower food prices resulting from public investment may offset certain benefits of poverty reduction, although the net impact of public investment on rural poverty reduction is enormous. Ignoring the price effects would lead to overestimation of the poverty reduction effects.[1] On the other hand, many of India's rural poor are net buyers of food because of land constraints. As a result, they benefit from lower food prices induced by public investment.

The Case of India

Background on government expenditure, agricultural growth, and rural poverty. India is a federal country, with the national constitution defining the spheres of responsibility in making laws and exercising executive power between the central government and the Parliament, on the one hand, and the state governments and legislatures, on the other. In agriculture and related activities, the predominant responsibility for legislation and exercise of executive power lies with the state governments, whereas the central government has exclusive responsibility only for interstate rivers and for fisheries outside territorial waters. Even expenditures on agricultural research, on which the central government spends more than all the states put together, are disbursed through the states.

State governments are responsible for irrigation, power, agriculture, animal husbandry, dairy, soil conservation, education, health, family planning, rural development, forests, and more. Thus, it is important to look at the trends in state government expenditures.

State government spending has grown substantially in recent decades, with a fivefold increase in real terms between the early 1970s and the early 1990s. The rate of increase slowed, however, from 8 percent a year during the 1970s and 1980s to 3.14 percent a year in the early 1990s. The expenditure items that grew most rapidly during the period 1970–1993 were social welfare and rural development. In terms of composition, 75 percent of total state government spending went to development expenditures, and the remaining 25 percent went to nondevelopment expenditures. Since the 1980s, the share of agriculture in total expenditure has declined from 30 percent to 20 percent, and irrigation's share has also declined.[2] In contrast, expenditure on rural development programs has expanded from 6.3 to 16.4 percent of total economic services, suggesting that resources may have been reallocated away from productivity-enhancing investments to those that have a much lower impact on agricultural productivity and production growth.

Technology, infrastructure, and productivity trends. One of the most significant changes in Indian agriculture during the past few decades has been the widespread adoption of high-yielding varieties (HYVs). During the Green Revolution the crop area planted to HYVs for five major crops (rice, wheat, maize, sorghum, and pearl millet) increased from less than 17 percent in 1970 to 40 percent in 1980. The percentage reached 55 percent by 1994.

[1] How much net sellers will gain from increased productivity depends on the relative magnitude of demand and supply elasticities.

[2] In 2004 China was the largest spender on agriculture among all developing countries, followed by India. India accounted for 27 percent of total spending on agriculture in all developing countries included in the IFPRI government spending dataset (44 countries). Together, China and India accounted for 70 percent of total agricultural spending in developing countries (Fan 2007).

Although HYVs have been one of the major engines of productivity growth in Indian agriculture, irrigation has also been an important factor. For all of India, the percentage of cropped area that is irrigated increased from 23 percent in 1970 to 33 in 1988. In recent years, however, the increase has been marginal.

One of the greatest achievements in the development of rural India has been the rapid increase of electrification. In 1970 only 34 percent of villages in rural India had access to electricity, and by 1995 the percentage had increased to almost 90 percent. This rapid increase in electrification contributed not only to agricultural productivity growth by encouraging more irrigation, but also to reductions in rural poverty through the generation of non-agricultural employment opportunities.

The literacy rate in rural India increased steadily from 23 percent in 1970 to 40 percent in 1995, but with great regional variation. Similarly, road density in rural India, as measured in kilometers per thousand square kilometers of geographic area, increased from 2,614 in 1970 to 5,704 in 1995, a growth rate of more than 3 percent a year.

As a result of India's rapid adoption of new technologies and improved rural infrastructure, agricultural production and factor productivity have grown quickly. Overall agricultural production for India grew at 2.64 percent per year between 1970 and 1995. During the 1970s production growth was relatively low, at an annual average of 1.95 percent per year. During the 1980s it grew at 3.79 percent per year—much faster than most other developing countries during the same period. Since 1990 production growth has slowed to only 3.17 percent per year. Similarly, total factor productivity (TFP), defined as aggregate output minus aggregate inputs, grew at an annual average rate of 1.75 percent between 1970 and 1995. In the 1970s TFP showed no improvement, but it grew by 2.52 percent during the 1980s. Since 1990 TFP growth in Indian agriculture has continued to increase but at a much slower rate of 2.29 percent per year. The correlation between productivity growth and poverty reduction is very high, implying that productivity growth may be a more important determinant than production growth for explaining poverty reduction.

Rural poverty trends. The head-count ratio, defined as the percentage of rural population falling below the poverty line,[3] is used to measure poverty. Rural poverty fluctuated between 50 and 65 percent in the 1950s and early 1960s, before beginning to decline from the mid-1960s until the late 1980s. It fell from about two-thirds to one-third of the rural population. In the early 1990s it increased to about 40 percent during the implementation of policy reforms but declined again in 1993.

The long downward trend in rural poverty over the period 1967 to 1989 can be attributed to several important factors. As already mentioned, the rapid adoption of HYVs together with improved irrigation increased agricultural productivity growth during this period. This change in technology was a direct result of increased government investment in agricultural research and extension, infrastructure, irrigation, and education during the 1960s, 1970s and 1980s. The stagnation in agricultural productivity growth and the increase in rural poverty observed during the early 1990s were due to reduced government expenditures in rural areas during this period.

Major Findings: Marginal Impact of Government Spending on Rural Poverty and Agricultural Productivity

Table 1 shows the total effect of government spending on rural poverty and agricultural productivity growth. Two measures are constructed. The first measure is the elasticity of each item of government spending, which shows the percentage change in poverty or productivity corresponding to a 1 percent change in government expenditure on that item. The second measure is the marginal return for an additional Rs 100 billion of government expenditure. The second measure is more useful because it compares the relative benefits of equal incremental increases in expenditures and thus provides crucial information for policy makers as they set government spending priorities to further increase productivity and reduce rural poverty.

The results show that government expenditure on roads had the largest impact on rural poverty. If the government increased investment in roads by Rs 100 billion, the incidence of rural poverty would

[3] This is defined as Rs 49 of income per month at 1973–1974 prices.

Table 1: Effects of Additional Government Expenditures on Poverty and Productivity in India, 1993

Expenditure variable	Elasticities				Marginal impact of spending Rs 100 billion at 1993 prices				Number of poor reduced /Rs million spent	
	Poverty		TFP		Poverty		TFP			
					(percent)					
R&D	-0.065*	(2)	0.296*	(1)	-0.48*	(2)	6.98*	(1)	91.4*	(2)
Irrigation	-0.007	(5)	0.034*	(4)	-0.04	(6)	0.56*	(3)	7.4	(5)
Roads	-0.066*	(1)	0.072*	(2)	-0.87*	(1)	3.03*	(2)	165.0*	(1)
Education	-0.054*	(3)	0.045*	(3)	-0.17*	(3)	0.43*	(4)	31.7*	(3)
Power	-0.002	(6)	0.0007	(5)	-0.015	(8)	0.02*	(5)	2.9	(7)
Soil and water	-0.0004	(7)	0	(6)	-0.035*	(7)	0	(6)	6.7*	(6)
Rural development	-0.019*	(4)	n.a.		-0.15	(5)	n.a.		27.8*	(4)
Health	-0.0007	(8)	n.a.		-0.02	(4)	n.a.		4.0	(8)

Source: Fan, Hazell and Thorat, 1999
Note: Numbers in parentheses are ranks. TFP is total factor productivity. n.a. is not available.
* denotes significant at the 5 percent level.

be reduced by 0.9 percent. Further, for each Rs 1 million increase in investment in roads, 165 poor people would be lifted above the poverty line. These impacts on poverty are nearly twice as large as those of the next-best poverty reducer—government investment in agricultural research and development (R&D).

Investment in roads not only reduces rural poverty through productivity growth, but also increases nonagricultural employment opportunities and leads to higher wages. The productivity effect accounts for 24 percent of the total impact on poverty, nonagricultural employment accounts for 55 percent, and increases in rural wages account for the remaining 21 percent.

Government investment in agricultural R&D had the second-largest impact on rural poverty but the largest impact on growth in TFP. Another Rs 100 billion of investment in R&D would increase TFP growth by almost 7 percent and reduce the incidence of rural poverty by 0.5 percent. Moreover, another Rs 1 million spent on R&D would raise 91 poor people above the poverty line. R&D has a smaller impact on poverty than roads because it affects poverty only through improved productivity, and it has not been particularly targeted to the poor by the government.

Government spending on education had the third-largest impact on rural poverty reduction. An additional Rs 1 million spent on education would raise 32 poor people above the poverty line. Most of this effect comes through greater nonfarm employment opportunities and increased wages.

Government expenditure on rural development had the fourth-largest impact on poverty reduction. An additional Rs 1 million of expenditure would raise 28 people above the poverty line. Unlike other investments, however, rural development expenditures had no distinct impact on TFP growth in agriculture and thus do not provide a long-term solution to the poverty problem. Government expenditures on soil and water conservation and health had small impacts on rural poverty and no discernible impact on agricultural productivity growth.

Summarizing the Main Findings

The results show that government spending on productivity-enhancing investments (especially agricultural research and extension), rural infrastructure (especially roads and education), and rural development targeted to the rural poor all contributed to reductions in rural poverty, and most of them also contribute to growth in agricultural productivity. But their effects on poverty and productivity differ greatly.

The study also estimated the marginal returns to agricultural productivity and poverty reduction from additional government investments on different technology, infrastructure, and social

investments. Additional government expenditure on roads had the largest impact on poverty reduction as well as a significant impact on productivity growth. It is thus clearly a dominant strategy. Additional government spending on agricultural research and extension had the largest impact on agricultural productivity growth and also led to large benefits for the rural poor. Additional government spending on education had the third-largest impact on rural poverty, and additional irrigation investment had the third-largest impact on agricultural productivity growth. Moreover, additional government spending on rural development contributed to reductions in rural poverty, but its impact was smaller than expenditures on roads, agricultural R&D, and education. Finally, additional government expenditures on soil and water conservation and health had no impact on productivity growth, and their effects on poverty alleviation through employment generation and wage increases were negligible.

The Case of China

Background on government expenditure, growth, inequality, and rural poverty. China is one of the few developing countries that has made remarkable strides in reducing the total number of poor people during the past two decades (World Bank 2000). Although economic reforms began in the late 1970s, it would have been impossible to achieve rapid economic growth and poverty reduction without several decades of government investment. The case study identifies the different channels through which government investments affect growth, inequality, and poverty.

Trends in growth, poverty, and income distribution. Per capita income in rural China was extremely low before the reforms in 1978. In 1978 average income per rural resident was only about US$150 (Fan, Zhang, and Zhang 2004). China was one of the poorest countries in the world, and 33 percent of the total rural population was below the poverty line, without access to sufficient food or income to maintain a healthy and productive life.

This situation changed dramatically after the introduction of rural reforms in 1978. Per capita income increased from 220 yuan in 1978 to 522 yuan in 1984, a growth rate of 15 percent a year. The income gains were shared widely enough to cut the number of poor, and by 1984 only 11 percent of the rural population remained below the poverty line. During the second stage of reforms (1985–1989), rural income continued to increase but at a much slower rate of 3 percent a year. This slowdown was mainly due to stagnation of agricultural production after the reforms. Over the same period rural income distribution became much less egalitarian, and the Gini index rose from 0.264 to 0.301. The ratio of per capita rural income in coastal regions to that in other regions also increased, from 1.21 to 1.51 (Zhang and Kanbur 2001). Because development of the nonfarm sector was concentrated mostly in the coastal areas, where per capita income was already high and poverty incidence much smaller than elsewhere, the number of poor increased from 89 million in 1984 to 103 million in 1989, a net gain of 14 million in five years.

Only in 1990 did rural poverty begin to decline again. The number of rural poor dropped 9 percent a year, from 103 million in 1989 to 50 million in 1997. Additionally, the rate of rural poverty reduction was faster than that of income growth (5 percent a year) during the period, showing that factors other than income growth were at play. In 1995 the government set a target of eliminating all rural poverty by 2000. To accomplish this objective, it introduced a series of policies and committed substantial financial resources.

Although rural residents earned less than half their urban cohorts in 1978, with the success of the reforms, that percentage increased to 59 percent in 1983. By 1997, however, it had declined to 40 percent, mainly owing to fast growth in urban areas and relatively sluggish rural earnings. Poverty in China is thus mainly a rural phenomenon, and the urban poor are relatively few (Park, Wang, and Wu 2002). In 1990 average per capita income among the poorest 5 percent of urban residents was 689 yuan—more than double the urban absolute poverty line of 321 yuan and greater than the per capita income of 65 percent of rural residents. Higher income levels accompanied by annual consumer food subsidies of at least 200 yuan per urban recipient left the urban population much better nourished than their rural counterparts.

Why was the government antipoverty program so successful? Before 1979 the major national objective of rural policy was to provide cheap food, capital, and labor for urban residents and industrial development. Urban and industrial-biased development strategies were implemented at farmers' expense. Hence, reducing rural poverty was not a priority of the government's policy agenda during the pre-reform period.

China's poverty alleviation strategy developed in three steps. Before 1984 social welfare programs were used mainly to subsidize poor families, and no formal strategy existed for reducing the number of poor in rural areas. From 1984 to 1995, the government pursued a strategy of regional targeting whose objective was to alleviate poverty by developing regional or local economies. Because the extremely poor were concentrated in remote areas with limited access to roads and other infrastructure, this regional development policy did not trickle down to them.

After 1996 the government adopted a food-for-work program intended to build the necessary infrastructure in poor rural areas. The scheme provided a fund through which roads, irrigation, and other projects were carried out by extremely poor farmers. Individuals employed on the projects sometimes received food or vouchers that could be exchanged for food and other necessities.

Trends in Public Investment

Patterns in R&D expenditure. China invested about 10–13 percent of total R&D expenditures in agriculture during the past four decades. The development of China's research personnel,[4] however, has not matched the pattern of funds allocated to research. By 1973 about 10,000 scientists worked in the Chinese system. From 1973 to 1990, the number of research personnel increased rapidly, to almost 60,000 researchers—an annual rate of growth of 10 percent. After 1995 the number of researchers declined marginally to about 53,000 in 1997.

The regional pattern of R&D expenditures reveals that the northwest region (Gansu, Shaanxi, Qinghai, Ningxia, and Xinjiang) spent much less than coastal areas, and expenditures of the former were stagnant or even declining in the 1990s.

Several studies have quantified the effects and returns of research investment on agricultural production (Fan and Pardey 1997; Fan 2000). Huang, Rozelle, and Rosegrant (1999) suggest that if China increased its investment in agricultural research and irrigation by 4.5 percent per year, it would become a net exporter of grains by 2020. With every 1 percent increase in agricultural research and irrigation investment, China could produce an additional 21 million metric tons of grain in 2010 and an additional 36 million metric tons in 2020.

Irrigation. Investment in irrigation increased negligibly from 1976 to 1990. During this period there was no increase in irrigated areas in Chinese agricultural production. In response to a grain shortfall and large imports in 1994–1995, the government increased its investment in irrigation in 1996 and 1997. Among all the regions, the northwest accounted for the largest increase in the 1990s, followed by the northern China Plain. Investment in the northeast and southwest remained stagnant during most of the 1990s.

Education. After 1978 China adopted the "nine-year compulsory schooling" education policy, which implied that all children had to attend school for at least nine years to finish both primary and junior high school. As a result of these efforts, the illiteracy rate of the general population 15 years and older declined from 48 percent in 1970 to less than 10 percent in 1997. Labor quality improved substantially and provided opportunities for farmers to use modern farming technology and to engage in nonfarm activities in both rural towns and urban industrial centers.

Despite extraordinary success in basic education in China, many poor were not reached by government efforts. Illiteracy was highest in the western region to begin with, and its rate of decline was the lowest of all provinces. According to official statistics, in the poorer half of the townships of 35 counties supported by a World Bank project in Yunnan, Guizhou, and Guangxi, average enrollment was at least 10 percentage points lower than the national average for the same age group (Piazza and Liang 1998).

Infrastructure. Government investment in rural road construction increased very little over the period 1953 to 1976. Nonetheless, the length of roads increased gradually. After 1985 the government increased its investment in roads, particularly high-quality roads such as highways connecting major industrial centers in coastal areas.

The greatest achievement in rural China was the rapid increase in electrification. Investment in power increased 90-fold. The percentage of villages with access to electricity was 97 percent in 1996, and more than 95 percent of households had an electrical connection. This percentage was much higher than that of India in the same year.

[4] Research personnel are defined as researchers who have at least a bachelor's degree and one to two years of research experience.

Before 1980 government investment in rural telecommunications was very low. Investment increased from 3 million yuan in 1953 to 237 million yuan in 1980. Large-scale development occurred only during recent years, with the number of rural telephones increasing from 3.4 million in 1992 to 17.9 million in 1997. This increase was a result of both public and private investments in the sector. During the period 1980 to 1997, public investment in telecommunications alone increased more than 10-fold.

Marginal Effects of Public Spending on Growth and Poverty Reduction

Table 2 shows the marginal effects of government spending on agricultural and nonagricultural production and rural poverty for the three regions and for China as a whole. The effects are measured as the returns in yuan or the number of poor people brought out of poverty per unit of spending in 1997. These measures are useful in comparing the relative benefits of additional units of expenditure on different items in different regions for setting priorities for government expenditure to further increase production and reduce rural poverty.

For the country as a whole, government expenditure on education had the largest impact on reducing poverty. In addition, it had the second-largest return for agricultural gross domestic product (GDP), and the third-largest return for nonfarm GDP and overall rural GDP. Thus, investing more in education was the dominant "win-win" strategy. For every 10,000 yuan invested, some 30 percent more are brought out of poverty compared with R&D investments, which had the second-largest poverty reduction effect. Investment in agricultural R&D had the largest impact on agricultural GDP and overall rural GDP.

Government expenditure on rural infrastructure also made large contributions to poverty reduction. Among the infrastructure variables considered in the study, the impact of roads was particularly large. For every 10,000 yuan invested, 3.2 poor people were lifted above the poverty line. Roads thus ranked third in poverty reduction impact, after education and R&D. In terms of impact on growth, for every yuan invested in roads, 8.83 yuan in rural GDP was produced, only slightly less than the return on R&D investments. Roads also yielded the largest return to rural nonfarm GDP, at 6.71 yuan for every yuan invested, which was 35 percent higher than the return to education investment. With respect to agricultural GDP, the return to road investment ranked third, after R&D and education investments.

Although electricity investment showed low returns for both agricultural and nonagricultural GDP, it ranked fourth in poverty impact. For every 10,000 yuan invested, 2.3 people were brought out of poverty. For rural telephony, investments had favorable returns for both agricultural and nonagricultural GDP, and the impact on rural poverty was similar to that of electricity investments.

For the country as a whole, irrigation investment had a relatively negligible impact on rural poverty reduction, although its economic returns were still positive and higher than those for electricity investment. This low impact may occur because irrigation affects poverty reduction solely through agricultural productivity.

With respect to rates of return for growth in agriculture, R&D investment had the highest returns in the western region, whereas irrigation investment had the highest return in the coastal region. For education and rural infrastructure (roads, electricity, and telecommunications), the central region had the highest returns. In the coastal region, a large amount of land had been converted for nonagricultural use owing to rapid industrialization. In contrast, land in the western region is more marginal, with limited water and soil quality. Therefore, major growth potential for agricultural production lies in the central region, where land is relatively scarce and agricultural production is still the main source of farmers' income. Not surprisingly, most government expenditures had their largest impact on rural nonfarm GDP in the coastal and central areas.

Impact on Regional Inequality

The contributions of each of the factors of production to inequality in agricultural, nonagricultural, and total labor productivity are assessed. Regional inequality in agricultural labor productivity has not changed much. The contributions of three conventional inputs (capital, labor, and land) declined, whereas the contributions of most public investments, especially R&D, electrification, and telephones, increased. Public investment's contribution to regional inequality in agricultural labor productivity increased from 11 percent to 22.1 percent during the period.

Table 2: Returns of Public Investments for Production and Poverty Reduction in China, 1997

Public investment	Coastal region	Central region	Western region	Average
Returns to total rural GDP from investments in (yuan per yuan expenditure):				
R&D	8.60	10.02	12.96	9.59
Irrigation	2.39	1.75	1.56	1.88
Roads	8.38	13.73	4.29	8.83
Education	9.75	7.78	5.06	8.68
Electricity	1.52	1.35	0.61	1.26
Telephone	7.12	8.54	4.13	6.98
Returns to agricultural GDP from investments in (yuan per yuan expenditure):				
R&D	8.60	10.02	12.69	9.59
Irrigation	2.39	1.75	1.56	1.88
Roads	1.67	3.84	1.92	2.12
Education	3.53	3.66	3.28	3.71
Electricity	0.55	0.63	0.40	0.54
Telephone	1.58	2.64	1.99	1.91
Returns to nonfarm GDP from investments in (yuan per yuan expenditure):				
Roads	6.71	9.89	2.37	6.71
Education	6.22	4.13	1.78	4.97
Electricity	0.97	0.71	0.21	0.72
Telephone	5.54	5.91	2.14	5.07
Returns to poverty reduction from investments in (number of poor reduced per 10,000 yuan expenditure):				
R&D	1.99	4.40	33.12	6.79
Irrigation	0.55	0.77	4.06	1.33
Roads	0.83	3.61	10.73	3.22
Education	2.73	5.38	28.66	8.80
Electricity	0.76	1.65	6.17	2.27
Telephone	0.60	1.90	8.51	2.21
Poverty loan	0.88	0.75	1.49	1.13

Source: Fan, Zhang and Zhang 2004

Notes: The parameters from the productivity functions were used to compute the returns to GDP. The marginal returns were calculated by multiplying the production elasticities by partial productivity of each spending item.

In contrast to agricultural productivity, regional inequality in nonagricultural labor productivity almost doubled. Public investment's contribution to regional inequality in nonagricultural labor productivity increased by 118 percent from 14.4 percent to 30.5 percent during the period.

The contribution of all the inputs to overall inequality was also assessed. Capital's contribution to worsening regional inequality increased from 8.5 percent to 22 percent, although its shares in the inequality of agricultural and nonagricultural labor productivity changed negligibly. This change was probably due to a structural shift in capital from agricultural to nonagricultural production in the economy, because rural industry is more capital intensive than agriculture. Similarly, irrigation accounted for a decreasing share of overall inequality. The contributions of roads, agricultural R&D, electricity, and telecommunications increased significantly. These results thus suggest a regionally biased public investment strategy over the past two decades. The coastal region enjoyed the most favorable investment from the government.

Summarizing the Main Findings

The results of the case study show that government spending on production-enhancing investments, such as agricultural R&D and irrigation, rural education, and infrastructure, all contributed to agricultural productivity growth and reduced regional inequality and rural poverty. Variations in their marginal effects on productivity growth, however, were large.

Government spending on education had the largest impact on poverty reduction and very high returns for growth in agriculture and the nonfarm sector, as well as for the rural economy as a whole. Among all the types of investments, additional spending on education in the less-developed areas also had the largest effect in reducing regional inequality.

Government spending on agricultural research and extension improved agricultural productivity significantly. This type of expenditure also had the largest returns to growth in agricultural production and overall production in the rural economy.

Government expenditure on rural telecommunications, electricity, and roads also had substantial marginal impact on rural poverty reduction. These poverty reduction effects came from improved nonfarm employment and increased rural wages. Road investment had the largest return to GDP growth in the nonfarm economy and the second-largest return to the overall rural economy, which was only slightly lower than R&D investment.

Irrigation investment had a modest impact on growth in agricultural production and even less impact on rural poverty reduction. Across regions, additional investments in the western region contributed most to reducing poverty and regional inequality, because most of the poor were concentrated here. The poverty reduction effect of spending on education, agricultural R&D, and roads was especially high in the region. Economic returns to most investments, however, were larger in the central region.

Stakeholders

The previous sections have highlighted the importance of investments in rural infrastructure and other key public services that are necessary for achieving growth and reducing poverty in rural areas. The challenge for many developing countries is to find more effective ways to pay for additional public investments and to develop suitable institutional arrangements for their delivery. What institutional reforms are necessary to make the delivery of infrastructure services more efficient, and what is the potential role of the private sector?

The Public Sector

In most countries the public sector is the dominant supplier of infrastructure services. The results have generally been disappointing. The state-owned monopoly on provision has resulted in high levels of waste and inefficiency (Brook and Smith 2001). According to one estimate, technical inefficiencies in power, roads, railways, and water alone caused losses of US$55 billion a year in the early 1990s in developing countries, which is equivalent to 1 percent of all developing countries' GDP, a quarter of annual infrastructure investment, and twice the annual development finance necessary for infrastructure (World Bank 1994).

At present policy makers interested in expanding access to infrastructure services in remote rural areas can draw on a rich body of experience that challenges existing ideas. Governments must address the question of how infrastructure services are paid for, which raises pricing issues. Second,

when delivering services to the poor, governments should allow for a range of service options in developing private participation schemes. Third, encouraging competition can help reduce prices and expand access and should thus be used to the maximum extent feasible. Fourth, the quality of regulation matters; the key to developing regulatory frameworks is to make them credible to investors and to ensure they are viewed as serving consumers. Finally, the politics of all of these actions matters. Technocratic solutions may exist, but building consensus and ensuring trust and support for these policies will remain challenging.

The key questions in the allocation of public expenditures and the need for institutional reforms include:

- Are market failures being tackled? If so, which ones, and how?
- Are public expenditures for the sector adequate in addressing the sector issues?
- Are distributive concerns being addressed by narrowly based targeting mechanisms?
- Are services being provided efficiently, at least cost, and are they responsive to user demand?
- Is there any way to reform the recurrent cost funding mechanism?

The Private Sector

A global trend toward liberalizing and privatizing infrastructure activities began in the early 1980s and gained strengthen in the 1990s. At the forefront of this movement have been the developing countries, motivated by the desire to increase the efficiency of service delivery, accelerate the expansion of improved services, and bring a greater and more consistent consumer focus to service delivery (Brook and Smith 2001).

Between 1990 and 2000 private infrastructure projects in developing countries attracted more than US$680 billion of investment (World Bank 2007). Privatization can be an effective way to improve efficiency, since private firms are more responsive to end-user needs. Privatization also encourages and facilitates the imposition of cost-covering tariffs or user fees, thus addressing the problems of underpricing that vex many public sector enterprises. Greater efficiency and cost recovery allow firms to make investments and provide services that might not otherwise have been possible (Fan 2004). These characteristics also improve the government's fiscal condition by making available the same quality and quantity of services with smaller budgetary subsidies.

Although some results of private sector involvement in providing infrastructure services have been positive, empirical testing remains difficult because ownership reforms in infrastructure usually take place in a context of broader economic reforms. Additionally, many infrastructure privatization programs are relatively recent, limiting the availability of time-series data to test propositions about poverty impact. Based on broad experience, however, it is evident that ownership reforms to systematically expand access to infrastructure will depend critically on their detailed design (Estache, Gomez-Lobo, and Leipziger 2000).

The critical question that remains is, what strategies should government follow in focusing on reforms and pursuing private provision? A possible course of action might be to delay introducing private participation. This approach could allow time for market ideology to improve and boost the performance of inefficient public sector enterprises, thus making them attractive to potential bidders.

The first possible drawback to this approach is that it has often proven difficult, if not impossible, to improve the performance of public sector enterprises. The private sector has demonstrated that even in very difficult environments (for example, the power sector in Georgia), it can substantially improve efficiency and the quality of service. Relying on public provision can increase the pressure to adopt a more rational pricing policy for infrastructure, which will not only increase efficiency, but also increase reliance on funding from taxpayers rather than users. This situation may reduce the resources available to invest in expanding services for the rural poor, which in turn has implications for poverty reduction and economic growth. A second possible drawback is that because the private sector can be reluctant to place its capital at risk in developing-country infrastructure projects, governments may pursue options such as leases and management contracts. Management contracts, however, are often short term and may not lock in efficiency and productivity improvements. Moreover, because the private sector typically does not finance investment, approaches such as management contracts provide fewer pressures on them to commit to cost-

covering tariffs. Thus, there should be some realism about the likely impact and benefits of these types of private participation schemes.

Whatever policies countries choose, governments cannot avoid the most important reality that infrastructure services must be paid for, whether provision is public or private. The real issue regarding infrastructure provision in developing countries is not whether it is public or private, but whether more or less infrastructure will be provided.

The Role of Communities in Infrastructure Provision

Poor people and communities in developing countries are often viewed as beneficiaries or passive targets of interventions. They can also play a major role, however, in improving physical access to services, and government agencies need to understand that the role of poor people goes beyond participation in public consultations.

The financial reality in many developing countries is that communities have no choice but to get involved in improving roads, ports, and bridges. Thus, community ownership and management of these types of infrastructure is a viable way of providing sustainable access to all. Some strong evidence shows that when communities voluntarily own and manage local infrastructure, the cost of maintenance is significantly lower than when the same type of infrastructure is owned and managed by a public sector enterprise (Wellenius, Foster, and Malmberg-Calvo 2004).

Policy Options

Given that significant increases in public rural investment seem unlikely, countries will have to give greater emphasis to using their public investment resources more efficiently. This approach requires better targeting of investment to achieve growth and poverty alleviation goals, and improved efficiency within the agencies that provide public goods and services. Despite vast differences in economic systems, natural sources endowments, socioeconomic conditions, and sizes, these case studies offer some important lessons.

Investing in Agricultural Research, Rural Infrastructure, and Education

Among the categories of investments, those in agricultural research, education, and rural infrastructure were found to be the most effective in promoting agricultural growth and poverty reduction in both countries. Developing countries need to focus on these three high-priority sectors in allocating their limited public resources.

Investing in Less-Developed Areas

Developing countries also need to increase their investments in less-developed regions. These regions lag behind not only because of unfavorable natural resources and geographical location, but also because of government neglect. The cases of China and India show that returns to investment are very high in terms of poverty reduction. Evidence has also shown that in many such regions, returns to many investments are also higher in terms of growth.

Investing in Low-Quality, Low-Cost Infrastructure

The limited evidence from China and Uganda suggests that it is often the low-quality, low-cost types of infrastructure, like feeder roads, that may have highest payoff in terms of growth and poverty reduction per unit of investment. Governments may begin to invest in this type of infrastructure in particular when the total government budget is limited.

Proper Targeting of Antipoverty Programs

Given that government spending on antipoverty programs generally had a negligible impact on poverty reduction, mainly owing to inefficiency in its targeting and misuse of funds, more efforts are needed to better target the funds to the poor. Otherwise, governments should use the investments to improve rural education and infrastructure, which promote long-term growth and thereby offer a long-term solution to poverty reduction.

Assignment

Your assignment is to recommend a public sector investment strategy for rural infrastructure to be considered by the government of one of the two countries discussed in this case.

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Chapter Three
Cambodia's WTO Accession (9-3)
by Fuzhi Cheng

Executive Summary

Since the creation of the World Trade Organization (WTO) in 1995 with 128 members, an additional 21 countries have successfully acceded to the organization. On October 13, 2004, Cambodia became the WTO's 148th member, almost 10 years after it had first applied and just over a year after its membership package was approved at the Cancún Ministerial Conference. Cambodia is the second in the category of least-developed countries (LDCs) to join the WTO, following Nepal's accession on April 23, 2004.

In its Protocol of Accession, Cambodia has taken on commitments in two major areas, including market access for imported goods and services and implementation of trade-related rules established in various WTO agreements. Cambodia agreed to bound its tariffs for all imported goods, eliminate export subsidies, allow foreign involvement in services, and apply trade-related rules either upon accession or at specified dates.

Cambodia's WTO accession has raised a number of issues that might be of concern to existing WTO members as well as to other applicants. First, the vague definition of membership criteria in the WTO document has resulted in a complex and lengthy accession process. Second, countries seeking membership usually have to agree on higher obligations but limited rights, a phenomenon referred to as the WTO+ commitments and WTO– rights. Third, the special and differential treatment (SDT) provisions in various WTO documents were not executed fully in the recent accession cases. The existence of these issues has greatly hampered the process of integration of the LDCs to the world economy.

A series of concrete steps must be taken to move the world trading system in a more pro-development direction. WTO legal documents should lay out detailed and transparent criteria for accession and make available specific provisions for LDCs compared with other applicants. Developed-country members should also exercise restraint in seeking concessions and commitments on goods and services from acceding LDCs and take into account those undertaken by existing LDC members. The role of SDT should be emphasized, and the SDT as set out in WTO agreements should be applicable to all acceding LDCs from the date of their accession. Accompanying the SDT, targeted and coordinated technical assistance and capacity building should be provided to acceding LDCs to cover all stages of the accession process.

Taking into account the interests of the identified stakeholder groups, your assignment is to recommend how the accession process can be streamlined for least-developed countries.

Background

Overall Economy before Accession

Cambodia is one of the world's least-developed countries (LDCs) according the classification of the United Nations (UN). The Cambodian economy was completely devastated during the Khmer Rouge years in the late 1970s and remained stagnant throughout the 1980s. Cambodia witnessed stronger economic growth after the formation of the Royal Government in 1993 and subsequent market-oriented reforms. Real gross domestic product (GDP) increased at an average annual rate of 7.2 percent between 1993 and 1997, peaking at 8.4 percent in 1995. After this short period of solid macroeconomic performance, the economy plummeted in 1998 as a result of regional economic crisis, civil violence, and political infighting. Economic growth resumed afterward, and the real GDP growth rate was maintained at 5–6 percent per year in 2001–2003. Inflation in Cambodia has been low in recent years (except 1998), and deflation occurred in 1999 and 2000.

As part of its economic reform efforts, Cambodia embarked on a series of trade liberalization exercises, with the aim of fostering its integration into

the world economy. Key steps were taken during the early phases of the establishment of the Royal Government and after the implementation of several programs sponsored by the International Monetary Fund (IMF). Important early reforms included the unification of exchange rates, tariff reform, the abolition of many nontariff barriers, and the implementation of a liberal Law on Investment. Under the terms of two memoranda signed by the IMF and Cambodia in 2001, further tariff reforms were introduced. Before Cambodia's WTO accession, the highest tariff rates of 40, 50, 90, and 120 percent were abolished, and the unweighted average tariff rate dropped to 16.5 percent, with the number of tariff bands reduced from 12 to 4 (0, 7, 15, and 35 percent) (WTO 2003a).

Economic development was pushed further by the Bilateral Textile Agreement signed by Cambodia and the United States in 1999. The agreement gave Cambodia a guaranteed quota of U.S. textile imports and established a bonus for improving working conditions and enforcing Cambodian labor laws and international labor standards in the industry. In 1999–2000, the economy grew at an average rate of 9 percent, driven largely by the expansion in the garment sector.[1] The industrial sector grew at a record high rate of 31 percent in 2000. Increased exports of garments resulted in a sharp increase in the share of exports in GDP, pushing it to almost 60 percent in 2002. In the same year, the garment industry's share of total export value reached 84 percent (Bargawi 2005). The garment industry also contributed to a significant share of government revenue, which consisted primarily of value-added taxes, trade taxes, and quota auctions. In 2002 this share was about 40 percent (IMF 2004). Cambodia's heavy dependence on garment exports was also a cause for concern, however, because of the intense competition in this sector, especially after the termination of the Agreement on Textile and Clothing (ATC) on January 1, 2005. This dependence on the garment industry also poses substantial risks to the country's balance of payment and fiscal deficits, which reached –10 and –5 percent of GDP in 2003, respectively.

In spite of its recent economic progress, Cambodia has lagged significantly behind most of its neighboring countries. The economy has continued to suffer from political instability and policy reversals and setbacks. Subsistence agriculture is the major component of the economy, employing about 80 percent of the work force and contributing more than 40 percent to the national income by the end of the 1990s. Yet the sector has experienced little growth in recent years (and negative growth in 2000 and 2002). Per capita GDP in 2002 was estimated to be US$300 (in 1995 dollars), with 35 percent of the population living below the poverty line. The poverty rate is higher (40 percent) in rural areas, where the majority of the population resides (80 percent). The rural poor suffer from low income and consumption, poor nutrition, little or no access to public services including school and health services, vulnerability to external shocks, and exclusion from economic, social, and political opportunities. The relatively high prevalence of HIV/AIDS in Cambodia is an additional challenge to its poverty situation.

WTO Accession

Cambodia initiated its WTO accession process in December 1994. At its meeting on December 21, 1994, the General Council of the WTO established a Working Party to examine the application of Cambodia to accede to the WTO under Article XII of the Marrakech Agreement. Members of the Working Party were Australia, Canada, China, the EU, India, Japan, the Republic of Korea, Malaysia, New Zealand, Panama, Singapore, Chinese Taipei, Thailand, the United States, and Venezuela. In June 1999 Cambodia submitted its Memorandum on Foreign Trade Regime (MFTR) to the Working Party, describing, among other things, its economy, economic policies, domestic and international trade regulations, and intellectual property policies. Based on the memorandum, the Working Party circulated a series of questions posed by the WTO members. Cambodia's response to these questions was submitted to the WTO Secretariat in November 2000. Subsequently, in May 2001, Cambodia started a series of bilateral negotiations with WTO members—in particular, Australia, the EU, and the United States. The bilateral negotiations concluded in July 2003.

The final meeting of the Working Party was held on July 22, 2003, when the accession package, including a summary of all prior meetings, the Protocol of Accession, and the schedules of market access commitments, was finally approved. Cambodia submitted its acceptance of the terms and conditions of membership set out in the Protocol of Accession, which was approved by the

[1] The tourism industry (service sector) also registered high growth rates during this period.

Ministerial Conference in Cancun on September 11, 2003, and signed by Cambodia subject to ratification. The Cambodian parliament ratified the protocol in September 2004 following the formation of the new Royal Government of Cambodia—after a year-long political negotiation. Cambodia became a member of the WTO on October 13, 2004, 30 days after it notified the WTO about its ratification. Cambodia, following Nepal (a member since April 23, 2004), was the second LDC to accede to the WTO since its transformation from the GATT in 1995.[2]

Major Commitments

The commitments made by Cambodia cover two major areas: market access for imported goods and services and implementation of trade-related rules established in various WTO agreements.[3] In its Protocol of Accession, Cambodia agreed to bind all tariff lines, which effectively set ceilings on the tariff rates of all imported products. As a result of unilateral tariff reductions undertaken in the 1990s, the tariff levels that Cambodia had actually applied in 2003 were in virtually all cases equal to or lower than the agreed-upon levels of tariff binding in the protocol. Thus, no significant reductions in tariffs were required upon WTO accession.

In particular, Cambodia agreed to an overall average bound duty rate of 20 percent, whereas the average rate of duty actually applied in 2003 was 16.5 percent. For agricultural products, Cambodia agreed to a simple-average bound rate of 28 percent, which was higher than the average applied rate of 19 percent in 2003. Peak bound rates for the most sensitive agricultural products were 50–60 percent and the lowest bound rates were 5 percent. For industrial products, the average bound rate was 18 percent, compared with the rate actually applied in 2003 of 16 percent. Peak bound rates were 50 percent, and the lowest rates, 0 percent. In addition to setting bound tariffs, Cambodia also agreed that it would not introduce, reintroduce, or apply quantitative restrictions or other nontariff barriers on imports, such as licensing, quotas, prohibitions, bans, and other restrictions having equivalent effects that could not be justified under the provisions of the WTO agreements.

In terms of market access in services, foreign involvement was generally permitted except in a very limited number of areas where local initiatives might be threatened.[4] Liberalization in services focused on areas that would contribute most to the investment climate. For example, Cambodia committed itself to allow foreign firms to operate in the areas of legal services, accounting, auditing, bookkeeping, banking, management consulting, telecommunications, and transport. To help Cambodians develop the skills needed for a modern, competitive economy, the country allowed foreign firms to provide higher education and adult education services. In addition, Cambodia liberalized services in the areas of health care and sanitation, refuse, and sewerage services, with the expectation that a foreign presence in these activities can contribute to improvements in public health. Cambodia also took on commitments to liberalize in sectors where it had long had an open policy regarding foreign participation, such as in banking, tourism, transport, and courier services, and where Cambodians could compete successfully with foreigners, such as in guide services.

In terms of subsidies, Cambodia agreed to comply with the Subsidies Agreement from the Protocol of Accession. It would either eliminate the existing system of remission of import fees and waiver of duty for certain goods used by certain investors (mostly export-oriented) or establish a functioning duty drawback system consistent with WTO provisions, through amendment of the Law on Investment, as necessary, by the end of 2013. Cambodia was, however, able to retain the right to waive customs duties on imported inputs used by its export industries. Securing exporters' access to imported inputs at world prices was extremely important for the garment industry and was thus an important negotiating objective for Cambodia.

Cambodia made a commitment to bind export subsidies in agriculture at zero and not to apply such subsidies in the future. It is, however,

[2] Altogether there are 32 LDC members in the WTO, 30 of which were GATT members that automatically gained WTO membership when WTO replaced GATT in 1994.

[3] Details on commitments on goods, services, and WTO rules can be found in the following WTO documents: "Goods Schedule" (WT/ACC/KHM/21/Add.1), "Service Schedule" (WT/ACC/KHM/21/Add.2), and "Working Party Report" (WT/ACC/KHM/21).

[4] For example, Cambodia committed to open its hotel market only for hotels of three stars and higher and committed to allow foreign supply of retailing services only for a small number of specific items or for supermarkets or large department stores (with floor space no smaller than 2,000 square meters).

important to note that under the WTO Agreement on Agriculture, LDCs are not required to do so. According to the Cambodian government, agricultural export subsidies were given up because they are neither desirable nor fiscally feasible in this country. Cambodia did maintain the right to provide export subsidies for industrial goods.

In the light of Cambodia's LDC status, the accession agreement allowed for a phased implementation of the main WTO agreements. Cambodia was granted four transition periods, delaying implementation of TRIPS (excluding pharmaceuticals and agricultural chemicals) until January 1, 2007; the Agreement on Technical Barriers to Trade (TBT) (product standards and technical regulations ensuring the safety of products) until January 1, 2007; the Agreement on Sanitary and Phytosanitary Measures (SPS) (measures to protect the health of people, plants, and animals) until January 1, 2008; and the Agreement on Customs Valuation until January 1, 2009.

The Stakeholders

Cambodia

Cambodia lost its quota-based preferential access to foreign textile and clothing markets, especially the U.S. and EU markets, because of the phasing out of the ATC at the end of 2004. Losing garment export markets could be disastrous for Cambodia given the fact that the industry supported more than 230,000 workers and accounted for more than 80 percent of total exports (Table 1). Indeed, Cambodia's primary goal in acceding to the WTO was to protect its garment industry. WTO membership was expected to provide market access to existing and emerging markets through a lower tariff rate, which could be as low as zero for an LDC like Cambodia, without any ceiling on quantities that could be exported. For Cambodia, however, entering the WTO did not necessarily mean expanded market access because it would still face potential competition from highly competitive suppliers like China and India. The combined effect of WTO accession and textile and clothing sector liberalization is difficult to predict, and the exact outcome will depend largely on the competitiveness of Cambodia's garment sector relative to that of other countries.

In a broader context, upon WTO accession, Cambodia could benefit from the rights accorded to all members under the WTO agreements, such as most-favored-nation (MFN) treatment, access to the WTO dispute settlement procedure, and participation in multilateral trade rule making and

Table 1: Cambodia's Garment Industry

Year	Export Value (million US$)	Share of Total Exports (%)	Employment (thousands)	Number of Factories
1995	27	3.3	18	20
1996	80	12.1	24	24
1997	227	28.9	82	67
1998	359	51.7	79	129
1999	661	66.2	96	152
2000	985	77.0	161	190
2001	1,156	81.4	187	185
2002	1,338	81.3	208	187
2003	1,607	83.8	234	197

Source: Bargawi 2005.

standard setting.[5] Acceding to a rule-based and predictable multilateral trading system such as the WTO could in turn engender more transparency and predictability in Cambodia's domestic policies and regulations. For countries like Cambodia that have suffered from a long history of political instability, this aspect is particularly important. Predictable and stable domestic policies could help attract more foreign direct investment and boost economic development.

It is worth noting that in addition to the benefits available to all member countries, Cambodia also enjoyed the SDT designed for developing countries. SDT typically includes four major areas: privileged access to the markets of trading partners, particularly the developed countries; the right to restrict imports to a greater degree than developed countries; freedom to subsidize exports; and flexibility in applying certain WTO rules or the right to postpone applying rules. For Cambodia, the transition periods permitted for implementation of various WTO agreements partly reflected the provisions of SDT.

Other Acceding LDCs

The United Nations' list of LDCs currently contains 50 countries, of which 32 have become WTO members to date. Since the establishment of the WTO in 1995, only 2 out of 21 countries that have acceded are LDCs—Cambodia and Nepal. Currently about 30 countries are in the process of accession, of which 8 are LDCs, whereas most of the others are low-income developing countries (Table 2). The remaining 10 LDCs have not yet submitted their accession requests to the organization. For those currently seeking WTO membership, Cambodia has set a good example from which numerous lessons can be learned.

First, like Cambodia, all LDCs currently seeking WTO membership are small economies that have no current or potential capability to become major players in the world market or power to disrupt other WTO members' domestic markets. This fact could be a bargaining factor used to facilitate and expedite their accession negotiations (Siphana 2005).

Second, Cambodia's unilateral tariff cuts and legislative and institutional improvements before accession have been key to its successful accession. Acceding LDCs, especially those whose domestic and trade policies are not in accordance with WTO rules, should implement substantive reforms in their domestic laws and regulations to align them with WTO disciplines before they apply to the WTO. This task may pose difficulties for the LDCs because they often lack institutional, financial, and human resources. In this case, a strong domestic political commitment to accession and sometimes external financial and technical assistance become necessary. For example, Cambodia's strong political will has secured domestic executive and legislative support during the whole accession period. Meanwhile Cambodia made active use of technical assistance and consultancies from international organizations, in particular through the Integrated Framework for Trade-Related Technical Assistance for Least Developed Countries (IF).[6]

Third, Cambodia's experiences show that the accession process can be extremely complex and time consuming. In fact, among the countries currently seeking membership, some applications date back to the late 1980s (Algeria) or early 1990s (Belarus, Russia, Sudan, and Ukraine) (Table 2). Therefore, applicants should form realistic expectations of what the WTO accession process involves. They should expect the process to take at least 5 to 10 years, or even longer. Given ministerial and staff turnover, a long-term, broad base of government, civil society, and private sector support for the accession initiative is required.

WTO and Existing Members

The inclusion of another LDC, Cambodia, as a member is a major step forward in making the WTO a truly global organization. With further expansion of the WTO, international trade will be increasingly subject to universally-applied,

[5] Whether an LDC like Cambodia can actually enjoy these rights is questionable. Murphy (2007) points out that LDCs generally have difficulty participating in WTO negotiations either because they lack representation in Geneva or have limited staff available to work on WTO issues domestically.

[6] The IF is a multiagency, multidonor program that helps the least-developed countries expand their participation in the global economy, thereby enhancing their economic growth and poverty reduction strategies. The IF program was first mandated by the WTO Singapore Ministerial Conference in December 1996. The participating agencies are the International Monetary Fund (IMF), the International Trade Centre (ITC), the United Nations Conference on Trade and Development (UNCTAD), the United Nations Development Programme (UNDP), the World Bank, and the WTO.

Table 2: List of Countries Currently Seeking Accession to the WTO

Europe and Central Asia	Middle East and North Africa	East Asia and Pacific	Sub-Saharan Africa	South Asia	Latin America and Caribbean
Russia (June 1993)	Algeria (June 1987)	Viet Nam (Jan. 1995)	Sudan* (Oct. 1994)	Bhutan* (Sept. 1999)	Bahamas (May 2001)
Belarus (Sept. 1993)	Lebanon (Jan. 1999)	Tonga** (June 1995)	Seychelles (May 1995)	Afghanistan* (Dec. 2004)	
Ukraine (Nov. 1993)	Yemen* (April 2000)	Vanuatu* (July 1995)	Cape Verde* (Nov. 1999)		
Uzbekistan (Dec. 1994)	Libya (June 2004)	Lao PDR* (July 1997)	Ethiopia* (Jan. 2003)		
Kazakhstan (Jan. 1996)	Iraq (Dec. 2004)	Samoa* (April 1998)	São Tomé and Principe* (May 2005)		
Azerbaijian (June 1997)	Iran (May 2005)				
Bosnia and Herzegovina (May 1999)					
Andorra (July 1999)					
Tajikistan (May 2001)					
Serbia (Feb. 2005)					
Montenegro (Feb. 2005)					

Note: Dates in parentheses show when the accession process was initiated.
* denotes least-developed country.
** Tonga's accession agreement was approved on December 15, 2005, and is now subject to parliamentary ratification.
Source: WTO 2006a.

multi-lateral rules rather than non-transparent, unilateral policies that have been directed against exports for decades. This change could be expected to push more WTO members toward realizing that internationally agreed rules now set effective limits to the conduct of national trade policies (Langhammer and Lucke 1999). For the WTO, Cambodia's accession, along with Nepal's, was also proof that the organization is able to accommodate the trading needs of world's poorest nations.

From the standpoint of current LDC members, Cambodia's accession represents a potential improvement in the balancing of political power among competing interests. In the WTO, decisions are made, *prima facie*, by negotiations and consensus and not by economic power or trade share. Legally, all members have equal rights of participation and the same level of influence on the outcome of negotiations irrespective of their levels of economic development. Therefore, although Cambodia is not expected to be a key player in economic terms, its membership is widely welcomed by the incumbent member countries, especially the LDCs, who can count on Cambodia to take up the issues confronting them. Given its shared objectives with other LDCs, Cambodia's entry might affect the future negotiation process in the WTO in favor of the LDCs. With Cambodia's accession to the WTO, the use of the consensus-based Dispute Settlement Mechanism (DSM) might be expected to enhance resolution of international trade disputes in ways more favorable to LDCs.

Apart from these institutional effects, the accession of an applicant to the WTO might have some

economic consequences on other WTO members as multilateral trade liberalization enhances import and export opportunities and thus affects the welfare of current members. High-income WTO members will probably benefit from terms of trade improvements as the global supply of their import goods increases by more than the global supply of their export goods; some developing-country WTO members whose exports compete directly with applicant-country exports may suffer from corresponding terms of trade deterioration. But compared with recently acceding large developing countries such as China, the expected terms of trade effects from Cambodia's accession (and that of other LDCs) may be insignificant.

Policy Issues and Questions

Accession Issues

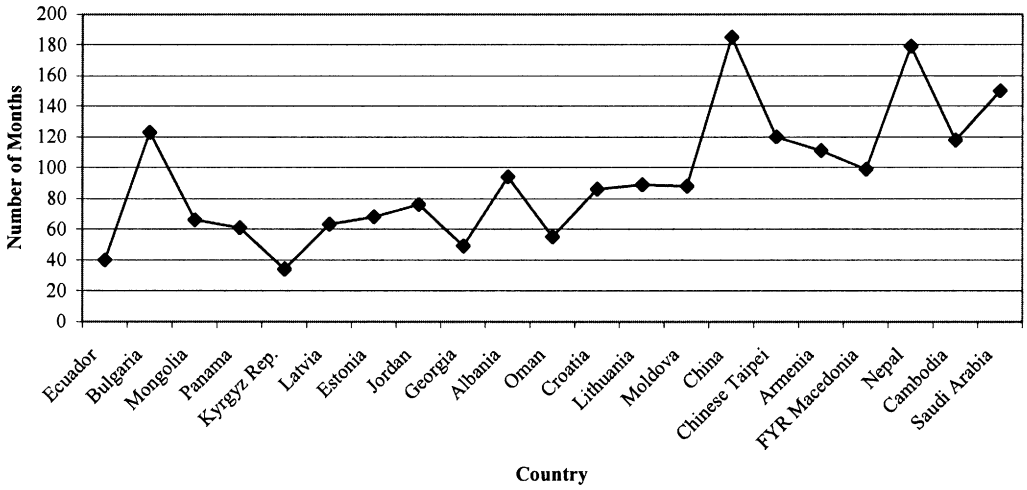
As indicated in Article XII of the Marrakech Agreement, "decisions on accession of new members shall be taken by the Ministerial Conference. The Ministerial Conference shall approve the agreement on the terms of accession by a two-thirds majority of the Members of the WTO." Article XII does not stipulate any membership criteria, however, and gives no guidance on the "terms to be agreed," leaving them to the negotiations between the WTO members and the candidate. The brevity of this text seems to suggest that entering the WTO is an easy and expedited process. Unfortunately, recent experience has shown the opposite: WTO accession can be cumbersome and extremely time consuming. For China, the process took more than 15 years. The average length of the accession process for the three newest members—Nepal, Cambodia, and Saudi Arabia—was around 10 years (Figure 1).

The slow pace of accession is only partly due to a lack of preparedness on the part of applicants. It also results from the complicated procedure an applicant country must follow during its accession process. At least 20 distinct steps can be readily identified (WTO 2004). The most important steps are the creation of a Working Party to consider the application for WTO membership, the drafting of a memorandum on the applicant's foreign trade regime, the applicant's satisfactory answering of questions from existing WTO members about this memorandum, bilateral negotiations with each of the Working Party members and multilateral negotiations with respect to WTO rules, the adoption of the Protocol of Accession by the Working Party and then by the WTO's General Council or Ministerial Conference, and finally the ratification of the protocol by the acceding country's parliament.

It is, however, the terms, rather than the multi-step procedures, that have really caused the protracted accession process for recently acceding countries. Broadly speaking, the terms to be negotiated deal with two types of issues: (1) commitments on WTO rules and (2) commitments and concessions directly relating to market access for goods and services. The WTO agreement and its annexes contain mandatory rules on the conduct of a wide range of national trade-related policies. Compared with GATT 1947, the rules are far more detailed and cover a wider range of topics, such as international trade in services (GATS), intellectual property rights (TRIPS), technical barriers to trade (TBT), and sanitary and phytosanitary barriers to trade (SPS). Accession negotiations therefore involve a detailed review of the relevant legislation and practice of applicant countries. Current members typically take the view that these practices must be substantially in line with WTO rules by the time an applicant joins the WTO (WTO 2004). In recent accessions, the implementation of particular legislation was deferred until after accession only in very few cases, with the exact timing specified in the acceding country's Protocol of Accession (WTO 2004). The existing financial, technical, institutional, and regulatory gap restraining acceding countries from implementing policies in conformity with the rule can therefore hinder their accession process.

Second, accession negotiations deal with market access for imported goods and services in applicant countries. Among GATT 1947 and WTO members, the protection offered to domestic firms has been progressively reduced as a result of successive rounds of trade negotiations; nevertheless, the level of protection still differs widely among WTO members (Langhammer and Lucke 1999). Relevant policy instruments include the level and dispersion of import tariffs for goods and market access commitments in services. Accession negotiations have become protracted because some current WTO members are using their leverage in negotiations to extract concessions from acceding countries that go much further than the commitments made by current WTO members at a similar level of economic development. Acceding countries are forced into negotiating bilateral terms with all key

Figure 1: Length of Accession to the WTO for Recent Members



Source: WTO 2004

trading partners, and in most cases these negotiations involve numerous rounds of intensive bargaining.

WTO+ and WTO–

According to official notes for WTO accession (WTO 2004), when seeking WTO membership, a country not only must abide by all WTO rules, but may also be required to make further commitments and concessions that individual members are allowed to ask for (during bilateral negotiations) in return for supporting the application. Without the support of key WTO members, there is no chance that the applications would be accepted. A controversy then arises concerning whether these additional commitments go beyond the ones agreed to by the incumbent countries (constituting WTO+ commitments) or require an accession country to forgo the rights available to other WTO members (WTO– rights).

Cambodia's accession provides a good example of both WTO+ and WTO– at work. For example, the 30 percent average bound tariff rate for agricultural commodities in Cambodia is significantly lower than that in other LDC members. For example, Bangladesh, a GATT contracting party and one of the 32 LDC WTO members, has an average bound tariff rate of 200 percent (ERS, USDA 2006). In terms of peak tariffs, Cambodia—a country where the majority of the population is employed in the agricultural sector—has been asked to provide less protection to its sensitive agricultural sectors than Canada, the EU, and the United States. The peak tariff for agricultural commodities in Cambodia was set at 60 percent, compared with 120 percent in Canada, 252 percent in the EU, and 121 percent in the United States. For sensitive products such as rice, a tariff bound of 40 percent was established. Such a low bound tariff rate could limit Cambodia's ability to protect against import surges in its most important agricultural commodity.[7]

An example of WTO– for Cambodia was that it was required to introduce data protection for pharmaceuticals immediately after its accession to the WTO, which is before both its 2007 accession requirement to comply with TRIPS and the new compliance deadline for pharmaceutical patenting

[7] Cambodia may rely on certain "safeguard" provisions to protect against sudden import surges that may cause substantial disturbances to domestic markets. The use of such measures, however, can lead to a nontransparent form of protection that introduces unpredictability and instability and hence is regulated by the WTO though the Agreement on Anti-dumping, the Agreement on Subsidies and Countervailing Measures, and the Agreement on Safeguards.

agreed to in the Doha agenda for LDCs (that is, 2016).[8] This WTO– requirement will prevent Cambodia's regulatory authority from using test data to assess bio-equivalent generic drugs and will thereby slow down the production or import of generic versions of the medicines. By preventing generic competition with the protected drugs (patented or non-patented), this obligation could have serious negative implications for public health in Cambodia.

In addition, Cambodia agreed to eliminate agricultural export subsidies by binding them at zero, although under the Agreement on Agriculture (AoA) LDCs were not required to undertake any commitments on export subsidies. This provision effectively seals off Cambodia's right under the AoA to introduce export subsidies on any agricultural product in the future should this be necessary in order to protect the livelihoods of poor farmers or to achieve development priorities.

Given all the WTO+ and WTO– commitments facing Cambodia, it is not surprising that upon the adoption of Cambodia's accession package on July 22, 2003, Mr. Cham Prasidh, minister of commerce and chief negotiator for Cambodia, commented: "This is a package of concessions and commitments that goes far beyond what is commensurate with the level of development of an LDC like Cambodia" (Charveriat and Kirkbride 2003 p.1).

Similar WTO+ and WTO– commitments also occurred to other recently acceding countries. For example, China had to agree to very substantial tariff reductions, most notably on agriculture, which went far beyond obligations of existing WTO members. It also had to agree to a special safeguard clause allowing individual WTO members to take measures to limit imports of Chinese products in case of a surge. This extraordinary measure, which goes against the founding principle of the WTO, the MFN clause, will apply to China for 12 years after accession. WTO+ and WTO– commitments differentiate WTO members, and they could be interpreted as contributing to a multi-tier multilateral trade system. This systemic concern is in addition to any of the adverse developmental effects that may result from these specific commitments.

Special and Differential Treatment (SDT)

Ensuring that the multilateral trade system promotes development remains a fundamental challenge confronting the WTO. Traditionally, developing countries have sought differential and more favorable treatment in the GATT/WTO with a view to increasing the development relevance. Such special and differential treatment (SDT) was made an element of the trading system in 1979 through the so-called "Enabling Clause" negotiated during the Tokyo Round (Keck and Low 2004). Currently there are 97 SDT provisions in the Uruguay Round agreements that fall into four major categories (discussed earlier in the section "Major Commitments"). In addition, technical assistance to help LDCs implement the commitments is suggested. Further special provisions in favor of particularly poor LDCs exist.

Many developing countries enjoy preferential access to markets in developed countries. The first preferential scheme put in place by a number of countries was the Generalized System of Preferences (GSP), for which a permanent waiver from the nondiscrimination requirement was eventually obtained under the Enabling Clause. Other schemes limited to a defined subset of beneficiaries include, for example, the African Growth and Opportunity Act (AGOA) and the Caribbean Basin Initiative of the United States, and the EU's "Everything But Arms" (EBA) initiative for least-developed countries. Regional preferential trading arrangements among developing countries are permissible even when they do not meet the requirements of Article XXIV of GATT 1994 (Langhammer and Lurcke 1999).

The WTO agreements also acknowledge that developing countries may find it particularly difficult to fully meet WTO obligations with respect to trade liberalization. Developing countries are therefore allowed greater freedom to restrict trade in exceptional situations (such as in the presence of balance of payments problems [Article XII of GATT 1994]) and to withdraw from existing commitments such as tariff bindings in order to protect infant industries (Article XVIII of GATT 1994). Developing countries are also allowed to provide

[8] The TRIPS itself represents a WTO– for Cambodia. In the Doha Declaration on the TRIPS agreement and public health, all LDCs have the right to delay the implementation of sections 5 and 7 of Part II of the TRIPS agreement in relation to pharmaceutical patents until 2016 (WT/MIN(01)/DEC/2). The draft report of the Working Party shows that Cambodia had asked for a 2009 deadline for TRIPS compliance, including pharmaceuticals, but they were eventually bargained down to January 1, 2007.

more domestic support to agriculture and are subject to lower tariff and subsidy reduction commitments.[9] Other special provisions for developing countries relate to extended implementation periods for various WTO rules (such as Article 15 of the Agreement on Agriculture, Article 10 of the SPS, Article 12 of the TBT, and Article 27 of the Subsidies and Countervailing Measurements [SCM]).

The most prominent features of the SDT associated with Cambodia's accession are the longer implementation periods for TBT (2007), SPS (2008), Customs Valuation (2009), and TRIPS (2007). However, this SDT package has very limited implications for Cambodia because within this short implementation period this poor country can hardly make any realistic adjustments. In contrast, existing LDC members have until 2016 to implement TRIPS, for instance.

Furthermore, implementing all these agreements within few years of accession will be extremely burdensome for a country like Cambodia, where the national budget is under stress (the deficit was 5 percent of GDP in 2003) and already unable to cover essential social expenditures in health and education. According to available estimates, the cost of implementing such agreements is around US$100 million (Charveriat and Kirkbride 2003), in addition to the other costs associated with post-accession adjustments. Yet the Working Party rejected the Cambodian negotiators' demand for technical assistance in implementing the four agreements.

Policy Options

Although there is much debate about how the Doha Development Round should proceed, there is no question that accession issues are on the negotiation agenda. The experiences of Cambodia and Nepal illustrate what WTO accession might entail for an LDC. From these cases, one might conclude that the WTO accession process is inherently power based and the very antithesis of the original intention and design of the WTO. Indeed, the acceding countries have not received what is best for their trade and development interests, but only what they can negotiate with existing members. The most challenging aspect, however, is that it is very difficult to change the current WTO accession practice because acceding countries have no role to play in setting the rules relating to accession since they are by definition outside the system. And once they are inside the system, they either lose the incentives or simply do not have the power to make a change. This situation serves the interests of powerful WTO members and undermines the credibility of the WTO as a rules-based system.

Attempts within the WTO to change this situation and to facilitate LDCs' accession were well reflected in its legal documents. Paragraph 9 of the Doha Ministerial Declaration, signed by 142 member countries of the WTO at Doha, Qatar, in November 2001, commits "to accelerating the accession of LDCs" (WTO 2001). In paragraph 42 members pledged that "Accession of LDCs remains a priority for the Membership. We agree to work to facilitate and accelerate negotiations with acceding LDCs." Furthermore, the General Council decided on December 10, 2002, to streamline the process of LDCs' accession (WTO 2002). The Cancun Ministerial Conference again stated, "We take the opportunity to reaffirm our commitment to the Guidelines on the Accession of LDCs adopted by the General Council on 10 December 2002, and to facilitate and accelerate their accession" (WTO 2003b). Despite these statements, however, there is no evidence that they have helped facilitate the fast-track accession of LDCs to the WTO in recently acceding cases.

If the developed-country members of the WTO really want to accelerate and simplify the accession process of the LDCs and push the WTO in a pro-development direction, they must go beyond the rhetoric and pursue several concrete steps. First, Article XII of the Agreement Establishing the WTO should be interpreted with clear-cut guidelines detailing transparent criteria for accession. The WTO should incorporate a specific provision for the accession of LDCs relative to other acceding developing countries. In the accession process, efforts should be made to expedite document exchange and streamline accession procedures with assistance from the Secretariat. WTO members and the Working Party should adopt additional

[9] The *de minimis* permissible subsidies in developing countries are 10 percent of the value of production, instead of the normal 5 percent for developed countries. The average tariff reduction commitments for developing countries are 24 percent compared with 36 percent for developed countries.

measures in their bilateral negotiations to facilitate and streamline the accession process.[10]

Second, in terms of market access, members should exercise restraint in seeking concessions and commitments on goods and services from acceding LDCs and take into account those undertaken by existing LDC members. Acceding LDCs could be asked to make commitments commensurate with their level of economic development, administrative and institutional capacity, and trade and financial needs, but should not be required to undertake higher levels of commitments than those made by the founding LDC member countries of the WTO.[11] Moreover, acceding LDCs should not be asked to make commitment on any of the plurilateral agreements of the WTO or to participate in other optional sectoral market access initiatives.

Third, the SDT as set out in WTO legal documents might be made equally applicable to all acceding LDCs from the date of their accession. Different transitional arrangements under specific WTO agreements could be granted, taking into account individual development, financial, and trade needs. In addition, all SDT should be made mandatory and legally binding and subject to the dispute settlement system of the WTO.[12]

Fourth, acceding LDCs should get high priority for receiving targeted and coordinated technical assistance and capacity building covering all stages of the accession process. The role of the IF could be emphasized so that effective collaboration between WTO and other organizations and donors could be achieved. In the case of Cambodia and Nepal, the IF contributed positively to the accession process. Ethiopia, Lao PDR, and Yemen are among the 31 LDCs currently in various stages of the IF process.

Finally, given the importance of the agricultural sector in the economies of LDCs—particularly its role in poverty reduction, human development, food security, and rural development—commitments on subsidies and tariffs on agricultural commodities should be negotiated with great care.

Assignment

Taking into account the interests of the identified stakeholder groups, your assignment is to recommend how the accession process can be streamlined for least-developed countries.

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[10] In consultation with members, the Secretariat has streamlined the accession process for least-developed and small island developing economies by reducing the number of Working Party meetings (to an average of three or four) and by ensuring that maximum progress is made between meetings without requiring the acceding government to visit Geneva. To the extent possible, bilateral market access negotiations in goods and services are held in the capital of the acceding government (WTO 2004).

[11] While there is some consensus among members on restraining their demands for concessions, there is much less agreement on establishing equal treatment between applicants and existing members.

[12] The work of the Trade and Development Committee on SDT provisions is still underway (WTO 2006b). The Doha Declaration has mandated the committee to identify which of those SDT provisions are mandatory and to consider the legal and practical implications of making mandatory those that are currently nonbinding.

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Chapter Four
The WTO Dispute Settlement Mechanism and Developing Countries: The Brazil–U.S. Cotton Case (9-4)

by Fuzhi Cheng

Executive Summary

The Dispute Settlement Mechanism (DSM) of the World Trade Organization (WTO) is often seen as one of the major achievements of the multilateral trading system. Many believe that the WTO DSM has introduced greater "legalism" and provides a more "rules-oriented" system relative to the "power-oriented" one of the General Agreement on Tariffs and Trade (GATT). Indeed, since its inception in 1995, more and more developing countries have used this system to pursue their trading rights. More important, trade disputes recently resolved through the WTO DSM have involved successful challenges, by developing countries, to certain unfair trade practices of developed countries, including the Brazilian challenge to U.S. cotton subsidies.

Cotton production and trade are highly distorted by policy. Since the late 1990s cotton subsidies in the United States have been frequently criticized for driving down world prices. The continued depression of the world cotton price has made this commodity a hot spot of agricultural trade disputes at the WTO. Citing injury to its domestic cotton industry, Brazil initiated a dispute settlement accusing the United States of provoking and maintaining WTO-inconsistent domestic and trade policies. Relative to the size of national economies, some African countries have suffered far more, but their voice was rarely heard at the WTO DSM.

The reluctance of poorer nations to use the WTO DSM to challenge their richer trading partners raises a number of interesting issues. Most fundamentally, it reflects a long-recognized fact that economic and political power still plays an important role in today's world trading system. Because of developing countries' lack of financial, institutional, and human resources, they may find the barriers to using the WTO DSM prohibitively high. For those who manage to enter the DSM or even legally win a case, benefits remain elusive because they can hardly force the losing defendants into compliance. In addition, developing countries risk retaliatory action by rich countries whose trade policies are challenged. This risk is particularly great for the African countries, which are highly dependent on foreign aid from developed countries.

Several policy options are offered to address these issues. One way of increasing developing-country access to the DSM is to reduce litigation costs, either by using the legal aid currently offered through the Advisory Centre on WTO Law (ACWL) or by introducing some tailor-made and less-demanding litigation procedures for "small claims." A mechanism for collecting trade data and the formation of a permanent panel could further reduce dispute settlement costs. During the panel ruling implementation stage, developing countries can build on their retaliatory power by further liberalizing their domestic markets and increasing the export stake of developed countries. Forging alliances with constituencies within the developed countries provides an effective strategy that not only strengthens developing countries' retaliatory power, but also helps them avoid possible political repercussions from the losing party.

Your assignment is to propose changes in the WTO DSM that would benefit small, low-income developing countries.

Background

The Dispute Settlement Mechanism in the WTO

The inception of the WTO in 1995 was accompanied by a collection of procedural changes to the GATT. One aspect that has received a great deal of attention is the newly designed DSM. This unique mechanism for the settlement of disputes establishes a formal and mandatory set of procedures intended to prevent the detrimental effects of unresolved international trade conflicts. More

important, it helps to mitigate the imbalances between stronger and weaker players by making the resolution of disputes a matter of law rather than power. Most people consider the DSM to be one of the major achievements of the Uruguay Round, and since 1995 it has gained practical importance as members have frequently resorted to using this mechanism.

The WTO's DSM is governed by the Dispute Settlement Understanding (DSU), which is effectively an interpretation and elaboration of GATT Article XXIII. There are four phases in the DSM: the consultations, the panel, the appellate review, and the implementation. The DSM starts with consultations, in which a complainant country communicates with a defendant country on the latter's disputable trade measure(s). The two parties have 60 days to consult for a mutually satisfactory solution to the dispute. If no solutions are worked out, the complainant can request a panel proceeding.[1]

The dispute settlement panel meets with concerned parties and other countries (third parties) that notify the WTO of a "substantial" interest in the case. It then prepares an interim report, offering both sides an opportunity to make comments and clarification. The two parties can negotiate a settlement at this point. If no settlement is made, the panel issues its final report (ruling), which is then adopted by the DSB. The complainant, the defendant, or both can appeal; and when this occurs, the dispute settlement case moves to the Appellate Body (AB).[2] The AB upholds or overturns the panel ruling in whole or in part and the AB's decision is final.

If AB ruling favors the defendant, the case typically ends; otherwise, the dispute settlement proceeds to the implementation stage.[3] During this stage, the panel or the AB, calls for the defendant to bring its measures into accordance with its WTO obligations. If the complainant believes that the defendant has not taken appropriate steps, it can subsequently request a "compliance" panel. This panel must determine whether the defendant's efforts have, in fact, brought its measure(s) into compliance. If not, the complainant can ask the DSB for permission to "retaliate" against the defendant. Retaliation typically involves suspending concessions or other WTO obligations to the defendant.

How Developing Countries Have Fared in the DSM

During the first five years of DSM operation (1995–1999), the European Union (EU) and the United States made extensive use of the mechanism. Of the 185 consultation requests made from 1995 through 1999, the United States and the EU accounted for 60 and 47, respectively, or a combined 59 percent of all requests (Davey 2005). Despite their greater representation in the WTO membership, developing countries only initiated 46 requests (about 25 percent) during this period.

Between 2000 and 2004, the DSM was marked by a noticeable decline in consultation requests—a total of 139 requests. More significantly, the EU and the United States were no longer the dominant complainants in the system. During this period the EU and the United States files only 40 consultation requests, accounting for less than 30 percent of all requests. In contrast, developing countries' use of the system increased dramatically during this period. Altogether, they initiated around 60 percent of consultation requests. Brazil, Argentina, and India were particularly active, initiating 9, 7 and 6 consultation requests, respectively. Thus, in the past few years developing countries have become more frequent users of WTO dispute settlement, both in absolute and in relative terms.

More important, trade disputes recently resolved through the DSM have involved successful challenges, by developing countries, to certain basic policies of the developed countries—for example, India's challenge to the EU's Generalized System of Preferences (GSP) scheme (DS246), a multiparty challenge led by Brazil to the EU sugar program (DS265), and Brazil's challenge to U.S. cotton subsidies (DS267). These cases, and a few others, have directly or indirectly influenced the ongoing Doha Development Agenda negotiations and concluded in a direction toward fairer trade between the North and the South.

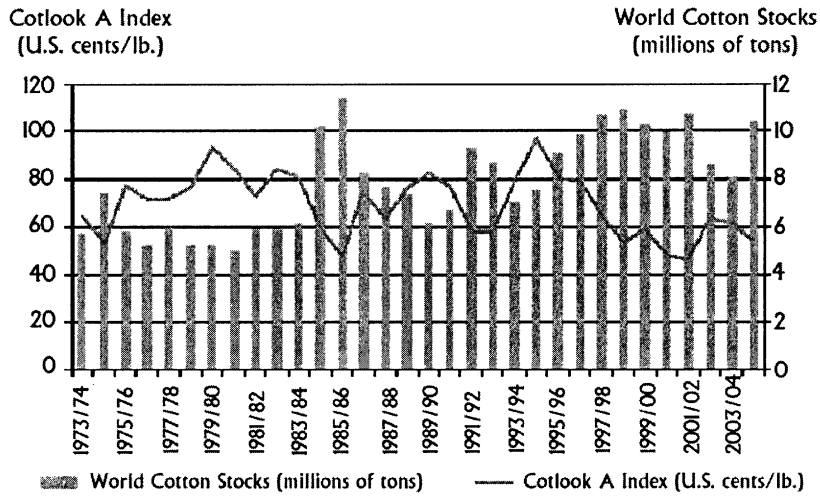
The importance of this development, however, should not be overemphasized because it has long been argued that the WTO DSM is too complicated for developing countries to make effective

[1] Panels are established by the Dispute Settlement Body (DSB) and are usually composed of three (possibly five) experts from different countries, agreed to by the parties on a case-by-case basis.

[2] Unlike panels, the AB is a standing body of jurists that is designed to ensure greater consistency across rulings.

[3] The implementation stage can also follow the panel stage if there is no appeal.

Figure 1: World Cotton Stocks and Prices, 1973/74–2004/05



Source: UNCTAD 2006.

use of it. Apart from the countries mentioned, most developing countries and all least-developed countries have remained silent since the creation of the WTO DSM. For those that have participated and won legal victories through the DSM, it remains to be seen whether they will actually benefit from those favorable rulings.

The World Cotton Problem

Average cotton stocks in the world have been higher since the late 1990s than in earlier periods (Figure 1).[4] The rise in cotton stocks is attributable to excess supply, notably in China and the United States, where government incentives have stimulated production. Oversupply of cotton has caused a downward pressure on prices.[5] Cotlook A index, a frequently cited cotton reference price, declined consistently during this period, bottoming at 46 U.S. cents/lb. in 2002, compared with a peak of 97 cents/lb. in 1995.[6] Following a meager upward movement in 2003 (63 cents/lb.) due primarily to a temporary increase in world imports, the Cotlook A index dropped again in 2004 and 2005 (61 cents/lb. and 55 cents/lb., respectively).

In 2001/2002, in the midst of an unprecedented sharp price slump, U.S. cotton farmers produced a record crop of 20.3 million metric tons, representing an increase of 42 percent by volume or 6 percent by acreage over the 1998 levels. By economic theory, such trends would suggest that the United States is a more efficient producer of cotton than other countries because when prices fall, only those with much lower costs would be able to expand production.

The United States is not even close to being a low-cost producer of cotton, however. A survey of the costs of producing raw cotton in 2001 by the

[4] This discussion of the world cotton problem focuses on the period 1999–2002 (and 2001–2002 in particular), the benchmark period at issue in the Brazil–U.S. cotton dispute.

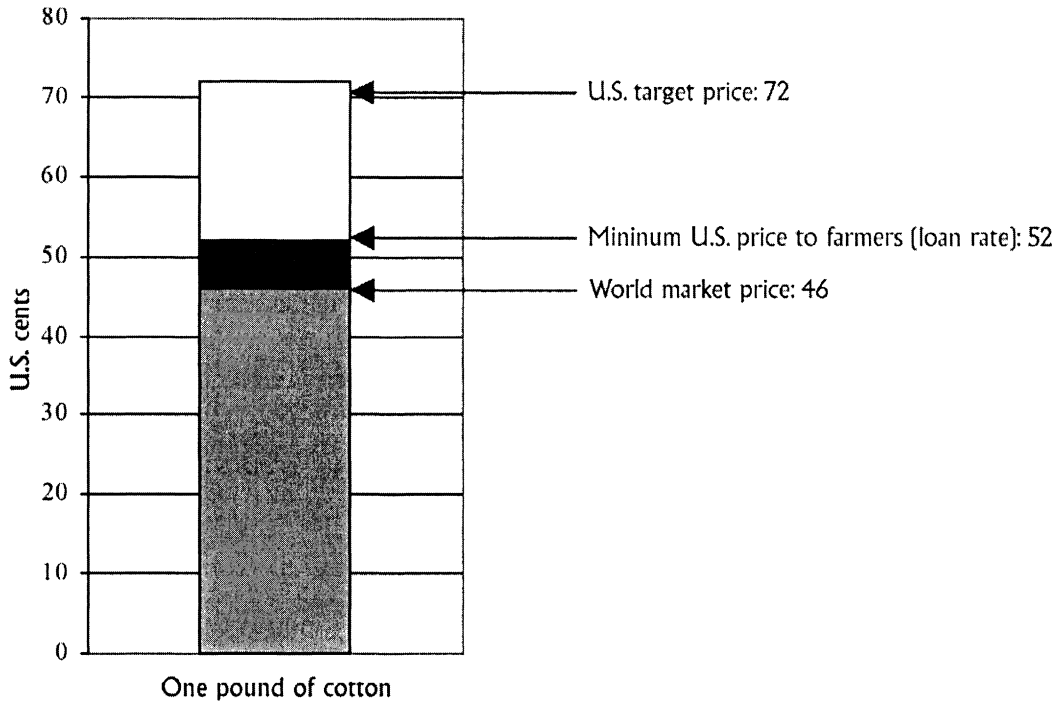
[5] The reasons for the collapse of cotton prices also include weak cotton demand as a result of slow world economic growth and competition from low-priced synthetic fibers.

[6] The Cotlook A index is the average of the cheapest five quotations from a selection of the main upland cottons traded internationally. Taking the average of the five cheapest quotations is a means of identifying those growths that are the most competitive and that therefore are likely to be traded in most volume. This practice is a proxy for weighting, which is impractical, owing to the absence of timely data by which it could be calculated (Cotlook 2006).

International Cotton Advisory Committee (ICAC) shows that production costs in Benin averaged about 30 cents/lb. (and were similar for other countries in the region, such as Burkina Faso and Mali), whereas one pound of cotton produced in the United States cost almost 70 cents (ICAC 2001). Despite its relatively high cost of production, the United States was still able to expand its area under cotton cultivation and increase its world market share, whereas several highly efficient producers in Africa and elsewhere were forced to cut production or move completely out of the market.

The competitiveness of U.S. cotton on the world market was backed up by subsidies and the United States accounts for approximately one-half of the world's total production subsidies for cotton (Watkins 2002). In 2001 the value of outlays in the form of cotton subsidies by the U.S Department of Agriculture's Commodity Credit Corporation (CCC) exceeded US$4 billion, higher than the value of total U.S. cotton production, which amounted to US$3 billion at world market prices in the same year (WTO 2002). Figure 2 breaks down the unit value of a pound of cotton produced and marketed in the United States in 2001/2002. Under the new marketing arrangements set in the 2002 Farm Act, cotton farmers were guaranteed a price of around 52 cents per pound ("loan rate"). In addition, farmers received a further set of payments (for example, "direct payments" and "counter-cyclical payments") to top up their income. The result is that, regardless of what happened to world market prices, farmers received a price of 72 cents per pound. This price was about 57 percent above the world market price in 2001/2002 (46 cents per pound).

Figure 2: Value Composition of One Pound of U.S. Cotton



Source: Watkins 2002.

U.S. subsidies to cotton farmers are important for the world market because a large share of the domestic production is exported.[7] Since 2001, U.S. exports as a share of production have averaged 59 percent, up from an average of 42 percent during the early 1990s. Today, the United States is the world's largest cotton exporter, accounting for more than 40 percent of world cotton trade in recent years. Large U.S. exports depress the world prices and impoverish farmers in developing countries who are competing against U.S. in international and domestic markets.

Brazil–U.S. Dispute Settlement on Cotton Subsidies

In late 2002 Brazil initiated a WTO dispute settlement case (DS267) against specific provisions of the U.S. cotton program. On September 8, 2004, a WTO dispute settlement (DS) panel ruled against the United States on several key issues. On October 18, 2004, the United States appealed the case to the WTO's AB, which, on March 3, 2005, confirmed the earlier DS panel findings against U.S. cotton programs. Key findings from the panel and AB reports include the following:

1. The AB upheld the panel's finding that the "peace clause" in the WTO's Agreement on Agriculture (AA) did not apply to a number of U.S. measures, including domestic support measures for upland cotton.[8] In addition, Production Flexibility Contract and Direct Payment outlays are non-decoupled subsidy payments and need to be evaluated against the "peace clause" limits.
2. The AB upheld the panel's finding that the effect of the subsidy programs at issue—that is, marketing loan program payments, Step 2 payments, market loss assistance payments, and countercyclical payments—is significant price suppression within the meaning of Article 6.3(c) of the Agreement on Subsidies and Countervailing Measures (ASCM), causing serious prejudice to Brazil's interests within the meaning of Article 5(c) of the ASCM.[9]
3. The AB upheld the panel's finding that Step 2 payments to domestic users of U.S. upland cotton were subsidies contingent on the use of domestic over imported goods and thus are prohibited under Articles 3.1(b) and 3.2 of the ASCM. The AB also upheld the panel's findings that Step 2 payments to exporters of U.S. upland cotton constitute subsidies contingent upon export performance within the meaning of Article 9.1(a) of the AA, and, consequently, the United States had acted inconsistently with AA Articles 3.3 and 8. In addition, the AB found that the Step 2 payments to exporters were prohibited export subsidies that were inconsistent with Articles 3.1(a) and 3.2. of the ASCM.
4. The AB upheld the panel's finding that the U.S. export credit guarantee programs at issue were "export subsidies" within the terms of the ASCM and thus circumvented the U.S. export subsidy commitments in violation of Article 10.1 of the AA and Articles 3.1(a) and 3.2 of the ASCM.
5. The panel recommended that (i) the United States should withdraw prohibited subsidies (export credit guarantees and Step 2 payments) without delay (in this case, within six months of the date of adoption of the panel/AB report or July 1, 2005, whichever was earlier); and (ii) the United States should take appropriate steps to remove the adverse effects of subsidies found to cause serious prejudice or withdraw them.

On March 21, 2005, the WTO adopted the AB and panel reports (WT/DS267/R, WT/DS267/AB/R), initiating a sequence of events under the WTO DSM whereby the United States is required to

[7] Although cotton subsidies are also large in China, the country has been a net importer in most years.

[8] The peace clause refers to Article 13 of the AA, which exempts domestic support measures from being challenged as illegal subsidies through DSM as long as the level of support for a commodity remains at or below the benchmark 1992 marketing year (MY) levels. Cotton subsidies in the United States were about US$2.0 billion in MY1992 but rose to more than US$4.1 billion in MY2001 and more than US$3.1 billion in MY2002 (WT/DS267/R). The peace clause expired at the end of 2003.

[9] The panel found that other U.S. domestic support programs (that is, production flexibility contract payments, direct payments, and crop insurance payments) did not cause serious prejudice to Brazil's interests because Brazil failed to prove a necessary causal link between these programs and significant price suppression.

bring its policies into line with the panel's recommendations or negotiate a mutually acceptable settlement with Brazil (see WTO 2007 for an up-to-date account of dispute settlement). In response, the U.S. government took several steps to bring the relevant programs into compliance. For example, the U.S. Department of Agriculture (USDA) modified the operation of the export credit program by issuing new regulations, basing fees that exporters must pay on the risk of non-repayment of loans made under the program. The Step 2 cotton program was terminated on August 1, 2006, after the completion of the 2005 marketing year.

Stakeholders

The United States

Cotton is an important agricultural commodity in the United States. During 1999–2002, U.S. cash receipts from cotton production averaged US$4.6 billion per year, while export sales averaged more than US$2.1 billion. Cotton is grown in various U.S. states. In 2002, 17 states reported cotton production valued at more than US$10 million. Texas is the largest cotton-producing state, accounting for an average of 26 percent of total U.S. production since 1993 (Schnepf 2005).

Cotton is one of the principal U.S. program crops, along with wheat, rice, feed grains, soybeans, and peanuts. Qualifying U.S. cotton producers are eligible for various program benefits including direct payments, countercyclical payments, loan deficiency payments, and the recently repealed Step 2 payments. From fiscal year 1991 (FY1991) to FY2004, U.S. farm subsidies for cotton production averaged US$1.7 billion per year, peaking in FY2000 at US$3.8 billion (Schnepf 2005).[10] U.S. subsidy levels, coupled with U.S. prominence in global markets, have contributed to the sharp decrease in the world cotton price in recent years, resulting in much international attention to U.S. cotton program outlays.

The WTO AB ruling on U.S. cotton subsidies has several implications for its domestic cotton policies. First, the United States must stop all "prohibited" export subsidies (that is, Step 2 payments and the subsidy element of export credit guarantees under the Export Credit Guarantee Program [GSM-102], the Intermediate Export Credit Guarantee Program [GSM-103], and the Supplier Credit Guarantee Program [SCGP]). Second, with regard to a ruling on "actionable" subsidies under the finding of serious prejudice caused by "price-contingent" subsidies (such as loan deficiency payments, marketing loss assistance payments, countercyclical payments, and Step 2 payments), the United States needs to "take appropriate steps to remove the adverse effects or withdraw the subsidy." Third, the United States must reform or eliminate its direct payment schemes so that they are truly decoupled from production decisions.[11]

The ruling from the Brazil–U.S. dispute settlement also demands deep reform of current U.S. farm policies in general. Most of the panel findings could extend beyond cotton to other major field crops (depending on their subsidy rate and shares in markets), particularly those concerning the potential limits on export credit guarantees. Some trade and market analysts, as well as legislators, have expressed concern that a broad finding against provisions of the U.S. cotton program could necessitate legislative changes to bring existing program operations into compliance with WTO rules, which could in turn necessitate changes in the next farm bill (Mercier and Smith 2006).

Cotton-Dependent Developing Countries

Cotton is widely grown in the developing world. Production and sales of cotton provides a vital source of national income and foreign exchange earnings for some of the world's poorest countries. For example, cotton accounts for approximately 40 percent of export earnings in Benin and Burkina Faso and 30 percent in Chad, Mali, and Uzbekistan. Its contribution to gross domestic product (GDP) in these and other developing countries ranges from 5 to 10 percent (Baffes 2003). Cotton also

[10] The USDA reports commodity program outlays on a fiscal year basis. The marketing year data used in the WTO case is converted from the fiscal year data. In the United States, the cotton marketing year starts August 1 and ends July 31 of the following year.

[11] It is noteworthy that the panel finding that U.S. direct payments do not qualify for WTO exemptions from reduction commitments as fully decoupled income support (that is, they are not green box–compliant) appears to have no further consequences within the context of this case and does not involve any compliance measures. This is because direct payments were deemed "non–price contingent" and thus were evaluated strictly in terms of the peace clause violation, not as actionable subsidies.

plays a pivotal role in the livelihoods of poor people. It is estimated that around 1 billion people in developing countries are directly or indirectly involved in cotton production and marketing (Watkins 2002). The state of the world's cotton economy has a critical bearing on their food security and economic well-being.

Since the mid-1990s that state has deteriorated. With continuously declining prices, many cotton farmers and traders in developing countries were driven out of the market. At a historical low price of 46 cents per pound in 2001/2002, even the most efficient producers would operate at a loss, unable to cover the costs of production and marketing. Brazil allegedly had suffered substantially from the low world price despite the fact that it is one of the lowest-cost cotton producers in the world. In its request for consultation (WT/DS267/1), Brazil showed that the U.S. subsidies induced a 41 percent increase in U.S. cotton exports, hence reducing the world price of cotton by 12.6 percent. Based on these figures, the losses incurred by Brazil were estimated at about US$600 million for the marketing year 2001 alone (Baffes 2004).[12]

The impact of the price depression was even greater on the poor cotton-dependent African countries, relative to the size of their national economies. It was estimated that in 2001 Africa lost a total of US$441 million because of trade distortions in cotton markets. Between 2003 and 2004, four West and Central African producers (Benin, Burkina Faso, Chad, and Mali) reportedly suffered a total export loss of around US$382 million (Baden 2004). These losses are more devastating for the poor population in the least developed countries because the cotton sector usually provides the only option for access to cash income and employment. In response to the crisis, a "Sectoral Initiative in Favor of Cotton" was raised in the WTO in 2003 by Benin, Burkina Faso, Chad, and Mali. The four countries ("cotton-4") described the damage that had been caused to them by cotton subsidies in richer countries and called for the subsidies to be eliminated and for compensation to be made to the four economies.

[12] It is worth noting that during 1999–2002, Brazil's cotton production and consumption were approximately equal and only in two of the four seasons was Brazil a net cotton importer.

Countries in the Doha Round Agricultural Negotiations

The dispute settlement on U.S. cotton subsidies has profound political implications far beyond this specific case. The cotton ruling, together with a subsequent one on sugar (against the EU), established that developed countries had failed to abide by subsidy rules that they crafted during the Uruguay Round.[13] This in turn has had serious damaging effects on their credibility in the Doha Round. Developing countries, on the other hand, have had an important moral and legal victory and as a result are poised in a stronger position in current multilateral negotiations.

The ruling on U.S. cotton subsidies, if fully complied with, could have substantial positive impacts on the ongoing agricultural negotiations in the current Doha Round. There could be an overall strengthening of ambition on further liberalizing agriculture trade, because developing countries and the Cairns Group could conclude that developed countries, such as the United States, are seriously interested in reform. Such a development could also increase the level of market access that developed-country producers seek to achieve in the Doha Round. In addition, U.S. compliance would increase the chances of reducing subsidies in the EU. Given that the United States wants to discipline EU subsidies, which are also subject to challenge at the DSM, implementation of the panel ruling would signal to the EU that it should do the same.[14] It is important to note, however, that the positive effects are contingent on full U.S. compliance with the panel ruling. If it chooses not to comply, things could work in the opposite direction.

[13] In September 2002 Australia and Brazil initiated a trade dispute settlement process against the EU's sugar export subsidies (DS265 and DS266; they were later joined by Thailand [DS283]). In April 2005 the AB upheld the major findings of the panel, which ruled that the EU had subsidized sugar exports beyond the level formally notified to the WTO and was thus in violation of the WTO AA.

[14] The reform of the Common Agricultural Policy (CAP) and subsequent reforms in sugar, wine, fruit, and vegetable production in the EU have shown some progress in this direction.

Policy Issues

Some researchers argue that with the creation of the WTO DSM, developing countries have been more able to identify potential violations of WTO commitments and have disputes settled in their favor. Jackson (1997) and others have noted, for example, that the new dispute settlement system under the WTO is more "rule-oriented" relative to the "power-oriented" system under the GATT. Indeed, the dispute settlement in the U.S. cotton case, as well as in many others including the recent EU sugar case, appears to support such an optimistic view. Notwithstanding progress, there still exists a need to enhance the capacity of and incentives for developing countries, especially the least-developed countries (LDCs), to use the system to ensure their trading rights. More important, systemic issues relating to the implementation of panel rulings remain to be addressed in order to safeguard the interests of developing countries in a more incontestable manner.

The Costs of Dispute Settlement

Developing countries frequently point out that the major players in the WTO DSM are usually rich and large countries such as Canada, the EU, Japan, and the United States (Table 1). One reason offered in the literature is that these countries have larger trade interests relative to small and poor countries, and higher trade volumes increase the stake in liberalization, which justifies investing resources in settling a trade dispute (Horn et al. 2005). In contrast, smaller and poorer economies tend to have smaller trade stakes both overall and in individual commodities. This fact makes them more sensitive to costs in the dispute settlement process, because it may be less beneficial for them to press charges against countries that maintain illegal trade measures. From 1995 to 2002, high-income countries were involved in more than 60 percent of the dispute cases, whereas low-income countries accounted for only 7 percent.

In the current WTO DSM the costs of settling a case turn out to be large. There are two types of costs associated with the dispute settlement process (see, for example, Hoekman and Mavroidis 2000; Bown 2005). The first type concerns the information costs relating to the litigation. This type of cost is lower for developed countries because they are well equipped with legal talent, are well briefed by export interests, and have a worldwide network of commercial and diplomatic representation that feeds their systems with relevant data. The information costs for developing countries, in contrast, are higher since they have limited national expertise available and find it difficult to collect the type of information that is required to bring or defend a WTO case.

The second type of cost is directly related to the litigation process and consists of the lawyers' and diplomats' wages. It is reported that Brazil spent between US$1 million and US$2 million on legal fees in the cotton case against the United States (Shaffer 2005). Although both developing and developed countries may face high legal costs if they decide to litigate, developing countries may find it harder to bear this burden. For example, the costs associated with the cotton case may be prohibitive for poor African nations, because their fiscal deficits are already at dangerously high levels. In short, if the sum of the two types of costs exceeds the potential gains of legally "winning" a case, developing countries may choose not to participate in the litigation process, even though they have a right to do so and an economic interest in the dispute's outcome.

Table 1: Participation in WTO Dispute Settlement by Members' Level of Development, 1995–2002

Income Category	No. of Cases as Complainant	No. of Cases as Defendant	Percentage of WTO Members' Total Exports
Low	20 (7%)	20 (7%)	3.8
Lower-middle	48 (17%)	35 (12%)	12.4
Upper-middle	35 (12%)	46 (16%)	10.2
High	183 (64%)	185 (65%)	73.6
Total	286 (100%)	286 (100%)	100.0

Source: Busch and Reinhardt 2003.

Retaliatory Power of the Complainants

The WTO is a set of self-enforcing agreements. From this perspective, the final outcome of a dispute settlement will depend on how effectively the winning party can force the losing one into compliance with the panel rulings. The WTO DSU stipulates that in case of noncompliance, at the end of a reasonable period of time (approximately 15 months), the plaintiff can set up specific WTO-sanctioned retaliatory measures (such as the suspension of concessions and other obligations) against the defendant to prevent continued losses, to induce change, and to deter unlawful behavior. In the WTO DSM, retaliation may play a central role as an ultimate safeguard for complainants against noncompliance, because reluctant respondents can no longer block the dispute settlement process and avoiding compliance is the only form of noncooperation left to them. In the cotton case, faced with the U.S. government's failure to eliminate its illegal programs by the deadline of July 1, 2005, Brazil requested authorization to take retaliatory measures during the DSB's meeting on July 15, 2005 (WT/DS267/21).[15]

Although the WTO DSU gives any member the possibility to use retaliation whenever noncompliance occurs, the credibility of a retaliatory threat could be different among different countries. It is evident that a retaliatory threat is more credible if the actual retaliation can lead to more welfare losses to the defendant. In this sense, larger and richer countries are more capable of imposing credible retaliatory threats against smaller and poorer countries, because rich countries usually maintain valuable market access commitments to poor countries that they can threaten to withdraw in retaliation. The more credible the threat is, the more likely a complaint will achieve full compliance from the defendant. Table 2 shows the outcome of dispute settlement by the complainant's development level. The numbers clearly show that developed countries have been more successful in gaining full concessions than less-developed ones.

Smaller countries, in contrast, are less capable of making credible threats because their potential retaliation will have little impact on the target market but can be costly in domestic welfare terms. It is thus not surprising that developing countries have rarely turned to retaliation to enforce dispute settlement against developed countries. The pressure for the latter to comply with panel rulings has been weak and largely moral in nature. As a result, developing countries have gained full concessions in fewer cases; about 40 percent of the cases involving poorer countries have concluded with full concessions (Table 2).

The asymmetry in enforcement power offers another reason (beyond of costs of litigation) why larger and richer countries are more likely to take up cases against smaller and poorer countries but not vice versa. With a larger economy, Brazil has more retaliatory capacity than smaller African countries to threaten to impose economic costs on the United States should it fail to comply with the panel decisions. In fact, Brazil has already announced that it plans to suspend some of its obligations under the Treaty on Trade-Related Aspects of Intellectual Property Rights (TRIPS) if the United States does not respect its obligations (WT/DS267/21).

Suspension of Aid or Preferential Treatment

Developing countries will always face extra-legal pressure from powerful countries, undermining the goal of objective trade dispute resolution through law. Many times, a small developing country can do little to counter EU or U.S. threats to withdraw preferential tariff benefits or foreign aid—even food aid—if the country challenges a European or U.S. trade measure. Such political tactics can undermine developing countries' faith in the efficacy of the legal system.

The literature has identified two additional types of political-economic issues that could affect countries' willingness to participate in dispute settlement (Bown 2005). First, a complainant that receives economic assistance from a respondent would exercise self-constraint in the litigation process in order not to jeopardize its privilege. Specifically, the more reliant the complainant is on the respondent for assistance and the more aid the respondent could threaten to withdraw, the less likely that the complainant would formally participate in a case against the respondent. For example, Sub-Saharan

[15] Recognizing, however, that the U.S. administration had made a first step by submitting its reform proposal to Congress, Brazil signed a bilateral accord with the United States that led to suspension of the arbitration procedure in order to give the United States more time to follow through with the legislative process for eliminating the subsidies (WT/DS267/22).

Table 2: Dispute Settlement Outcomes by Complainant's Level of Development, 1995–2002

	Level of Concessions			
Income Category	None	Partial	Full	Total
Low and lower-middle	8 (29%)	8 (29%)	12 (43%)	28 (100%)
Upper-middle	4 (27%)	3 (20%)	8 (53%)	15 (100%)
High	20 (18%)	10 (9%)	82 (73%)	112 (100%)
Total	32	21	102	155

Note: Table includes disputes concluded by early 2003. Too few disputes with low-income complainants occurred during the period for them to be counted separately.
Source: Busch and Reinhardt 2003.

Africa as a whole received about US$2 billion foreign aid from the United States in 2001 (excluding food aid), which far exceeded the estimated losses they had suffered from cotton trade in that year (about US$400 million). The U.S. foreign aid programs in the areas of economic and humanitarian assistance, such as development assistance, child survival and health funds, and HIV/AIDS initiatives, are critically important for these countries, which face profound public health, poverty, and development challenges. To avoid losing the foreign aid, none of the African countries joined the cotton dispute as co-complainants (although two participated as third parties).

The second political-economic pressure occurs when two countries participate in pre-existent preferential trade agreements or a privileged trade area. Once again, the threat of jeopardizing the economic relationship influences potential litigants' behavior in dispute settlement.

Policy Options

Substantial trade liberalization must be achieved if countries are to reap the benefits of globalization. Multilateral negotiations under the WTO play a pivotal role in facilitating global trade. Yet throughout the world, pressures for protectionism abound, threatening to roll back gains. Developed countries continue to succumb to lobbying by their own domestic producers and grant them protection. Simultaneously, developing countries with smaller fiscal resources respond by increasing border protection to shield their domestic farmers from declining agricultural prices. Domestic and WTO policy decisions have resulted in continued high subsidies in developed countries, matched by high tariffs in developing countries. The WTO's DSM may offer an alternative solution to this "prisoner's dilemma," by regulating the behaviors of different players in the global trading system.[16] A globally efficient and welfare-enhancing outcome is achievable if the DSM can effectively reduce subsidies on the one hand and protection on the other. The Brazil–U.S. cotton case exemplifies the important role that the DSM plays in moving the multinational trading system in a pro-development direction. But for the vast majority of developing countries to effectively use the system to their full advantage, some additional steps must be followed to improve the DSM.

Lowering the Cost of Information

To lower the cost of information, a developing country government should identify an approach that can reduce the burden on individual enterprises to have expertise on WTO matters and to collect, aggregate, and analyze relevant data. One policy option toward this end is to create an independent agency that specializes in trade barrier data collection and analysis (Hoekman and Mavroidis 2000). Through periodic surveys, data could be collected from a representative cross-section of trading companies, multinationals, trade and industry associations, and consumer organizations. The information that is compiled by the agency based on the survey data would be used by policy makers to assess the status of export markets, identify restrictive policies maintained by the trading partner, and establish potential WTO dispute cases.

[16] In game theory, the prisoner's dilemma is a type of non-zero-sum game in which two players try to get rewards by cooperating with or betraying the other player. In this game setup, cooperating is a strategy strictly dominated by defecting, so that the only possible equilibrium for the game is for all players to defect. This equilibrium is not, however, Pareto optimal in the sense that both can be better off by cooperating—hence the dilemma.

Adopting Procedural Reform

Because many cases that involve developing countries pertain to relatively small trade volumes, another way of reducing the cost of litigation is to consider adopting "light" dispute settlement procedures for "small" cases brought by developing countries (Horn et al. 2005). In such cases, fewer panelists could be appointed, and the panel process could be completed in a shorter period. A shortened and simplified panel process reduces lawyer fees, which are often assessed based on the complexity and time length of a case. Another possible option is to allow "light" procedures to be used in cases where affected exports are small in absolute terms but large in relative terms for the country or countries bringing the case. For developing countries even a small absolute trade flow may represent a large proportion of its total exports. Thus, a timely resolution of the case can not only reduce litigation costs, but also minimize the damage to the export sector for the duration of the dispute settlement.

Establishing a Permanent Panel

In the WTO DSM, panels are established by the DSB on a case-by-case basis, with panelists being current or former government officials paid by their respective governments. An alternative to the current practice is to establish a permanent roster of panelists who would be readily available to serve in dispute settlement panels and be compensated for their time through the WTO budget (Hoekman and Mavroidis 2000). This in effect would create a standing body of jurists that is similar to the AB. Permanent panels could have a number of additional benefits, including reducing the burden on the WTO Secretariat associated with DSM, more rapid conclusion of cases, more professionalism, and greater consistency in outcomes. Such a measure would, however, increase the WTO budget and would require additional funding from the members.

Providing Legal Aid

The creation of the Advisory Center on WTO Law (ACWL) further increases the ability of a developing country to participate in the dispute settlement process. The center, created in 2001 by a group of developed and developing countries, is designed to provide legal assistance on WTO matters to developing countries for below-market fees.[17] Specifically, it provides (1) general legal advice, (2) legal assistance in WTO dispute settlement proceedings, and (3) training in WTO dispute settlement. The developed members of the center have contributed the equivalent of at least US$1 million to its endowment. Developing countries are required to make a one-time contribution that varies depending on their share of world trade and per capita income, with no contribution required from least-developed countries. From 2001 to 2005, the center provided direct assistance in about 20 WTO cases. Seven of the cases involved developing-country versus developing-country matters—in each case on behalf of the poorer complaining developing country. The other cases involved challenges to developed-country measures, with six cases directed against the EU, three against the United States, and two against Australia. The completed cases have all been at least partially successful. Although it is still too early to assess the center's long-term impact on the position of developing countries in WTO dispute settlement, the experience so far seems to be positive.

Reconsidering Retaliation

Considering the weak enforcement power of developing countries, a recommendation frequently proposed is to change the rules so that non-implementation of panel rulings would be punished by withdrawal of market access commitments by *all* WTO members. In addition, developing countries can increase their own retaliatory power by further liberalizing their domestic market to developed-country exporters, because retaliation threats become more credible when the defendant has a larger export stake in the complainant's market. There is a basic problem, however, with unilateral or multilateral retaliation: it usually results in the complainant's responding to a WTO-inconsistent trade barrier with another trade barrier, an outcome that is contrary to the liberalization philosophy underlying the WTO. From an economic perspective, raising barriers is detrimental to the interests of the countries that do so, and to world welfare more generally. Thus, it would be much better if the WTO DSM could encourage use of the provisions in the WTO for re-negotiating concessions

[17] For example, LDCs are charged $25 per hour, while developing country members are charged between $100 and $200 per hour depending on economic size and per capita income. Developing countries that are not ACWL members may also request the Centre for legal advice, on a non-priority rate of $250 to $350 per hour.

(Hoekman and Mavroidis 2000). This approach would ensure that the net impact of dispute resolution would be more liberal trade rather than more protectionism, as negotiation involves compensating members affected by the withdrawal of a concession by reducing other trade barriers.

Building a North-South Alliance

Another strategy for strengthening a developing-country complainant's retaliatory power and avoiding possible political and economic repercussions is to forge alliances with constituencies within the developed countries (Shaffer 2005). By harnessing domestic political pressure and legal expertise within developed countries such as the EU and the United States, developing countries can, to a certain extent, offset the resource imbalances, enhance the credibility of their threats, and curtail the extra-legal coercion. Possible partners include the northern-based nongovernmental organizations (NGOs), consumer groups, and exporting industries that have a stake in the complainant's market.

Assignment

Your assignment is to propose changes in the WTO DSM that would benefit small, low-income developing countries.

Additional Readings

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Chapter Five
The Sugar Controversy (9-5)
by Fernando Vio and Ricardo Uauy

Executive Summary

Sugar, one of the world's most important food commodities, provides a high percentage of calories for the population in many countries. But consumption of calories either as sugar or fat by sedentary populations promotes overconsumption of energy and thus may contribute to the "globesity" epidemic and associated chronic diseases. In addition, sugar provides only energy ("empty calories"), potentially leading to micronutrient inadequacy, with corresponding health consequences.

The "sugar controversy" has its roots in an expert consultation held in early 2002 by the World Health Organization (WHO) and the Food and Agriculture Organization of the United Nations (FAO) on diet, nutrition, and physical activity for the prevention of chronic disease. This consultation produced a report (Technical Report Series No. 916, or TRS 916) that focused on the dietary and physical activity determinants of major chronic diseases and established the scientific basis for prevention of these conditions (WHO/FAO 2003). As part of the response to the global epidemics of diabetes and obesity ("diabesity")—major threats to the lives and well-being of populations across the globe—TRS 916 recommended limiting the population's mean intake of added sugars to 10 percent or less of total energy (Nishida et al. 2004). Sugar producers and sugar-exporting countries raised immediate concerns about the consequences of this recommendation for future markets. The recommendation was challenged on the strength of the evidence, its scientific merit, and the assumptions made; the sugar recommendation became the focus of a debate between the nutrition community, the sugar industry, and agricultural policy experts. The two positions contrasted the potential health gains with the economic implications of limiting sugar consumption.

This case raises several interesting issues that have wider implications, given that food policy is increasingly being shaped by health and nutrition considerations rather than solely by the economics of agricultural production. This case study analyzes the controversy from the perspective of health and nutrition consequences and presents policy options considering the potential trade-offs for agriculture. Despite the controversy raised by TRS 916, in May 2004, 191 countries at the World Health Assembly adopted the WHO global strategy on diet and physical activity prevention of chronic disease, based on the recommendations of TRS 916, which include the need to restrict sugar intake to no more than 10 percent of total energy intake. Most governments are now implementing this strategy to varying degrees, driven by the urgent need to cope with the increasing problems of obesity, diabetes, and related chronic diseases. In addition, interesting economic alternatives to sugar production are presently being explored. The apparent threat to agriculture offers the possibility of shifting agricultural production from sugar cane to products with greater added value, such as fruits and vegetables. The WHO strategy is actively promoting the production of fruits and vegetables, which favors health, to prevent chronic disease. In addition, the potential use of sugar cane in the production of ethanol as a biofuel demonstrates the need to examine new opportunities in agricultural production that can yield win-win situations for farmers in developing countries.

Your assignment is to recommend a position in the sugar controversy to the government of a developing country that faces not only rapidly increasing overweight, obesity, and associated chronic diseases, but also dependence on sugar exports for foreign exchange.

Background

The current concept of the food chain considers the full spectrum of food as a natural resource from "farm to fork." This concept starts with seeds, soil, water, and climate and ends by considering the impact of foods on the health, nutrition, and well-being of individuals and

populations. A basic tenet of this concept is that consumers who are well informed will make informed choices and select the foods that provide the best value for money. Thus food production today has implications well beyond the simple economic value of food as a trade commodity; the implications of food production include the health and nutritional consequences of consumption patterns as they affect human populations. For example, consumers who know the benefits of phytochemicals provided by berries will demand these products and be prepared to pay a high price for them. Thus, demand based on health and nutrition considerations will affect the supply and prices of what is produced.

Nutritional recommendations can clearly benefit agricultural producers in some cases, as for berries, but can work to the detriment of other agricultural producers when these recommendations suggest the need to limit or restrict the consumption of given foods, as is the case for animal fat (to reduce saturated fatty acid intake) and sugar (to prevent obesity and its complications). In the so-called sugar controversy, the WHO/FAO expert consultation on diet, nutrition, and physical activity for the prevention of chronic disease that produced TRS 916 (WHO/FAO 2003) based its scientific considerations on the need to address the global epidemics of obesity and diabetes, which are major threats to the lives and well-being of populations across the globe ("globesity"). TRS 916 took the bold step of recommending that populations limit their mean intake of added sugars to less than 10 percent of total energy, raising concerns from sugar-producing countries about potential consequences for the future market for sugar. Recommendations contained in TRS 916 were challenged on their assumptions and the strength of the evidence and became the target of a debate between the nutrition community and agricultural policy experts.

In the past, national and international recommendations have set goals of 10 percent for maximum mean population intake of added sugar, based on sugar's facilitating role in the genesis of caries. The WHO/FAO consultation did not consider this impact of sugar a major problem given that dental hygiene and fluoride in drinking water can reduce the consequences of sugar consumption on caries. The TRS 916 recommendation in 2003 was well supported by nutrition experts and ministries of health across the globe but was heavily criticized by the FAO Committee on Agriculture (FAO/COAG 2004) because of the possible adverse economic consequences for sugar producers.

The controversy between the compatibility of health benefits and economic considerations is an issue that will likely continue to be present. Food policies are now increasingly shaped by population health, nutrition, and well-being considerations and not just based on food products as commodities for international trade. In the case of Brazil, the Ministry of Health supported the global strategy for diet and physical activity recommended by TRS 916 while the minister of agriculture was rallying the Group of 77 (G-77) to challenge the FAO on this issue. This case study will examine the scientific basis for this debate and highlight some of the contrasting views on the health and nutrition front and on the agricultural policy dimensions.

Classification of Sugars

The term "sugar" is used more or less synonymously with "sucrose" to refer to a food derived from sugar cane or beets. Until 1800, nearly all sugar was produced from sugar cane; by 1990, however, beets accounted for 60 percent of the world's sugar production. Over the past two decades in the United States, and progressively in other countries, high-fructose corn syrup (HFCS) has displaced sugar in sweetened beverages and processed foods. In fact, observed intake of sucrose is stable or decreasing, whereas the consumption of total added sugars continues to increase owing to a rapid rise in the consumption of HFCS (Bray et al. 2004).

From the perspective of human nutrition, sugars are generally divided into two main groups: those incorporated as structural components of the intact food (fruits and vegetables), often labeled "intrinsic sugars," and mono- or di-saccharides that are added to foods and drinks by manufacturers, cooks, or consumers and known as "added sugars." Dietary guidelines in general do not recommend restricting intrinsic sugars or milk sugars (lactose, galactose), because these are not considered unhealthy. Added sugars and concentrated sugars in honey, syrups, and fruit juices, however, are deemed broadly comparable when considering untoward health effects (Mann 2004).

Effects of Sugar on Human Health

Obesity has become a global health problem, and the term "globesity" has been coined. Obesity affects mainly poor and middle-income people in

urban or semi-urban communities of middle- and higher-income countries. It is also increasingly present in low-income countries as the epidemiologic and nutrition transition continues to progress. According to analysis conducted over the past decade by WHO, overweight and obesity are major contributors to the burden of death (mortality statistics) and disability (disability adjusted life years [DALYs] statistics). Obesity, acting as an important determinant of other nutrition-related chronic diseases (NRCDs), has an indirect impact on the global burden of disease. Obesity contributes to the potential for coronary heart disease, hypertension, diabetes, and some forms of cancer. The relationship is not one of direct causality, but rather obesity is one of several interactive determining factors (WHO/FAO 2003).

Sugar is one of several dietary factors that contribute to obesity in sedentary populations and thus may affect the occurrence of some nutrition-related chronic diseases. Sugar contributes to the energy density of the diet, facilitating overconsumption of energy and generating a hormonal/metabolic response (insulin/glucose) that in sedentary populations promotes the development of the metabolic syndrome (an association of abdominal obesity, insulin resistance, altered plasma lipid levels, and hypertension) (Poppitt et al. 2002). This constellation of signs (syndrome) underlies the occurrence of diabetes, hypertension, heart disease, and some forms of cancer (Schulze et al. 2004). These conditions, however, have other contributory factors that act in synergy with excessive energy stores in determining the health outcomes (Mann 2004).

Substantial published work suggests that human appetite control systems are unable to fully accommodate the intakes of high-sugar and high-fat (energy-dense) foods and sweetened drinks by decreasing the consumption of other foods, thus maintaining energy balance. Frequent, regular consumption of energy-dense snack foods and sugary drinks leads to passive overconsumption of energy, resulting in weight gain. Reducing the intake of such foods would be expected to facilitate energy balance at a healthier level of stored energy, assessed by body weight or body adiposity (Raben et al. 2002). Much of the research on the effect of energy density on energy balance includes manipulations of both the sugar and fat content of diets. The responses are quite similar and reflect mainly energy density rather than fat-to-carbohydrate ratio (Stubbs et al. 2004). The case for sweetened drinks (soda beverages and fruit juices) as a contributory factor in the genesis of obesity in children and adolescents has been better documented in recent years (Ludwig 2002).

Physiological Effects of Sugar and Its Impact on Obesity

The effect of sugar on health has been a source of discussion for some time, as described in 1924 (Harris 1924 as quoted in Ludwig 2002):

> One of the causes of hyperinsulinism (and hypoglicemia) is the excessive ingestion of glucose-forming foods and that, as the result of overactivity induced by overeating, the islands of Langerhans become exhausted and ... (diabetes) follows. It is possible that the hunger incident to hyperinsulinism may be a cause of overeating, and, therefore, the obesity that so often precedes diabetes.

This statement was clearly speculative at the time and remains controversial today. Nonetheless, it serves to illustrate the controversy that has followed for nearly a century. Extensive modern studies have confirmed some aspects of the statement, whereas others, like the exhaustion of the pancreatic islets, remain purely speculative. A better understanding of the role of sugar in regulating appetite and the effect of obesity in establishing both insulin and leptin resistance is needed to provide strong mechanistic underpinnings showing the critical role of added sugars as a contributory factor in the present obesity epidemic. This discussion highlights the need to address both the individual and population-wide health consequences of sugar consumption in various settings, in terms of diet and physical activity. It is still not possible to precisely define the risk of obesity and other NRCDs, at a population level, that can be attributed to increased sugar consumption. There is a consensus, however, that limiting the consumption of sugar, especially in the form of sugary drinks and snacks, is an important component of the diet and physical activity interventions required to control obesity and type II diabetes in urban sedentary populations (IOM 2007).

The amount of sugar and its rate of absorption after a meal have significant effects on postprandial hormonal and metabolic responses. A meal with a high glycemic index produces an initial period of high blood glucose and a concomitant rise in

insulin; in some individuals this rise is followed by reactive hypoglycemia, owing to counterregulatory hormone secretion, and elevated free fatty acid concentrations. The rapid drop in blood sugar will trigger a hunger sensation and may induce excessive food intake, beta-cell dysfunction, dyslipidemia, and endothelial dysfunction.

The human data show that when individuals consume either high-sugar foods or drinks, they are not able to adjust the amount of calories consumed in the meals that follow (Warren et al. 2003). Thus, the habitual consumption of high-glycemic-index foods may increase the risk for obesity and type II diabetes; multiple experimental studies, clinical trials, and epidemiologic analysis support the existence of this sequence in the chain of events that controls food intake and energy storage (Tuomilehto et al. 2001; Ludwig 2002; Bouche et al. 2002). Drinks that are rich in added sugars are especially important in the promotion of weight gain. Children with a high consumption of soft drinks rich in sugars have a higher risk for overweight and excess weight gain (Berkey et al. 2004). Evidence from cluster randomized controlled trials suggests that replacing sugary drinks with noncaloric beverages decreases overconsumption of energy and obesity prevalence (Ball et al. 2003; James et al. 2004; Ebbeling et al. 2006).

It is difficult to assess the effect of a small excess of consumed energy over energy expenditure and the corresponding increase in body fat stores leading to obesity (Saris et al. 2000). The magnitude of the positive balance required to gain 2 kilograms (kg) of body fat over a year is on the order of 50 kilocalories (Kcal) per day (which corresponds to 12.5 grams of sugar)—well below the measurement error of methods for assessing dietary energy intake. On a more practical note, the health consequences of limiting energy intake from sugar depends on what replaces sugar in the diet. The ideal would be to increase consumption of high-fiber vegetables or legumes, because according to observed patterns of consumption, these plant foods are consumed in lower amounts than recommended. Moreover, they promote satiety, provide essential micronutrients, and have low energy density (Salmeron, Ascherio, et al. 1997; Salmeron, Manson, et al. 1997).

Empty Calories

A further concern regarding high sugar intake, especially in developing countries, is the fact that refined sugars provide energy but no specific essential nutrients such as vitamins and minerals. These sugar-derived "empty calories" satisfy energy needs but may result in vitamin and mineral deficits unless the rest of the diet is sufficiently rich in these specific nutrients. There is limited room for foods that provide only energy, such as sugar, because meeting the recommended intake of foods that provide the necessary fiber (fruits and vegetables), essential amino acids (protein), and essential fatty acids (fats and oils) can easily take up 90 percent of the total energy allowance. This leaves 5–10 percent for sugar and alcohol as potential sources of empty calories.

The U.S. Department of Agriculture (USDA) food-based dietary guidelines for individuals whose energy needs are 2,000–3,000 Kcal leave not more than 10 percent of energy for sugar, after the recommendations for the other food groups have been met. Thus in practice the recommended healthy diet limits the amount of added sugars to less than 10 percent unless energy expenditure is sufficiently high (that is, greater than 3,000 Kcal a day for a typical adult). Additional observational data from developing countries show that diets with greater than 10–12 percent of energy from sugars may have limited content of folate, thiamine and other B vitamins, calcium, magnesium, and potassium (USDA 2005). This finding raises concern about acute deficiency syndromes, such as observed in Cuba in the early 1990s after the collapse of the Soviet Union, when there was a need to increase sugar intake and ration nutrient-dense foods (Gay et al. 1994; Ordunez-Garcia et al. 1996). In addition, vitamin and mineral deficiencies may have long-term effects on the emergence of chronic diseases, including cardiovascular diseases, certain cancers, osteoporosis, and hypertension (Jenkins et al. 2004; USDA 2005).

Intake of Traditional Starchy Foods

Over the past 200 years or more, the increased consumption of refined-carbohydrate foods appears to have gone hand-in-hand with a reduced intake of high-fiber traditional starchy foods, including truly whole-grain breads, cracked wheat, dried peas, beans, and lentils. These foods are high in fiber and thus more slowly digested, have a lower glycemic index, and are higher in vitamins and minerals than the refined counterparts as presently consumed. Low-fiber, high-glycemic-index, and high-glycemic-load diets are associated with an increased risk of heart disease, diabetes, and certain cancers. As traditional high-fiber

carbohydrates such as whole grains are progressively eliminated from the diet, humans may lose the protection that slow-release carbohydrate foods and their associated nutrients provide against many major chronic diseases (Jenkins et al. 2004).

Policy Issues

In the joint WHO/FAO report of the expert consultation (WHO/FAO 2003), it is suggested that added sugars should be restricted to less than 10 percent of total energy, providing further justification for a guideline to restrict sugar intake that is in place in more than 20 countries. This report provided much of the scientific justification for the WHO global strategy on diet, physical activity, and health approved in 2004 by the World Health Assembly and being implemented at national and regional levels. The consultation group, composed of 30 experts from across the globe, agreed to the text and spirit of the WHO report "Diet, Nutrition, and Chronic Diseases," recommended nutrition requirements for the population, and recognized that a population goal for added sugars of less than 10 percent of total energy could be considered controversial by some (WHO/FAO 2003). The consultation group believed, however, that the studies showing no effect of added sugars on excess weight had limitations and that the detailed analysis of weight change and metabolic indexes for those with metabolic syndrome revealed the clear benefit of replacing sugars with complex carbohydrates. The consultation group also recognized that higher intakes of added sugars threaten the nutritional quality of diets by providing significant energy without specific nutrients. The group also believed that restricting added sugars was likely to contribute to reducing the risk of unhealthy weight gain, noting that added sugars contribute to the overall energy density of diets and promote a positive energy balance. Drinks that are rich in added sugars increase overall energy intake by reducing appetite control (IOM 2007).

Stakeholders

Considering the policy implications of TRS 916, the sponsoring organizations, WHO and FAO, found it of paramount importance to inform key stakeholder groups of the content of the report and provide an opportunity to comment on and react to it. As soon as the initial draft was ready, in this case three months after the expert meeting ended (a record time for a major WHO/FAO report), it was placed on the WHO website and comments were invited. In addition, meetings with industry (food and nonfood sectors) and with nongovernmental organizations (NGOs) of various types (consumers, nonprofit foundations, and academic centers) were scheduled.

There was great interest in the report by all parties. The lay press, the specialized technical and financial media sectors, media traditionally covering nutrition and health information, consumer and farming interest groups, and in some cases countries with particular interests in specific food products participated and openly debated the science and the policy implications outlined in the draft report. A period of three months was given to provide input in writing to the drafting group; comments derived from the open forum meetings were also considered in the final version of the report.

The inclusion of major stakeholders in the discussion of a draft version of the report provided an opportunity to assess reactions for or against the report's proposals and initiated a policy debate that was unusual for a report that had not even been published. This debate heightened the interest and expectations of consumer and other public interest groups as well as the concern of some governments and private sector organizations that could be affected. The WHO and FAO noted this process with interest after having received more than 100 comments originating in national organizations of industrialized and developing countries and a comparable number from individuals and organizations with technical expertise in the topic of the report.

The final draft was ready by December 2002 and circulated for individual approval by each of the 33 experts who participated in the meeting; it went to press early in March and was released in April 2003. The report was then taken to regional-level meetings and discussions involving member governments, the private sector, and technical organizations during 2003. Based on the progressive public and government interest in the topic, WHO/FAO convened an ad hoc reference group to develop a global strategy to support the implementation of the main recommendations of the report at national, regional, and subregional levels. This process of sharing the results of the report included presentations at the UN Standing Committee on Nutrition (SCN), the WHO Executive

Board, and the FAO COAG early in 2004. The report elicited high-level reactions for and against its main conclusions, and efforts to suppress its launching took the form of preventing approval and adoption by the World Health Assembly. One of the issues that took the debate beyond the traditional academic discussion into the realm of a heated controversy was the recommendation to limit the amount of sugar added to foods.

After the report was launched in 2003, intensive lobbying from the U.S. sugar industry and other sectors of the food industry threatened World Health Assembly adoption of the global strategy that emerged from TRS 916. This policy document recommended reductions in fat, salt, and sugar content of foods and increased physical activity as effective measures to prevent the major nutrition-related chronic diseases. It addressed the need for individual responsibility but also signaled that unless changes in the environment were implemented to facilitate healthy choices, it would be unrealistic to expect that major changes would be adopted. Industry objections centered largely on the recommendation to limit the intake of sugar, from two points of view.

In the first perspective, the food industry and some governments claimed that scientific evidence was insufficient and that other authoritative reports were discordant with TRS 916. Regarding the first point, industry quoted the Institute of Medicine (IOM 2002) report on dietary reference intakes for macronutrients issued in September 2002, which suggested that added sugars could provide up to 25 percent of total energy without detrimental effects on health. The president of the IOM, however, said in a written statement to the WHO that this interpretation was misleading because this maximal intake level was based on nutrient intakes observed in the United States, where the other components of the diet contain sufficient essential micronutrients to meet the needs of the population. This finding could not be extrapolated to other populations where empty calories from sugar-containing foods and beverages could compromise the supply of other critical nutrients. Thus this maximum intake amount does not imply that this level of intake is acceptable or desirable in other respects, such as for the prevention of chronic disease.

The food industry also argued against the recommendation using the joint WHO/FAO report on carbohydrates in human nutrition published in 1998 (FAO 1998), which acknowledged that a direct causal association might not exist between consumption of sugars and chronic diseases. The expert group recognized, however, that sugars contribute to the energy density of the diet and could contribute to the global epidemic of obesity and its related health consequences, including type II diabetes, coronary heart disease, and obesity. Furthermore, investigative journalism by the BBC revealed that the FAO/WHO carbohydrate report was heavily influenced by the sugar industry (BBC 2004). The sugar sector was instrumental in funding the meeting, selecting the experts, and securing funds for the employment of the final scientific editor of the technical report.

In the second perspective on this issue, some food policy institutions, like the World Sugar Research Organization (WSRO), and developing-country governments claimed that reductions in sugar consumption might have an adverse impact on sugar producers and the food industry. Some specialists have argued that limiting sugar intake may depress demand for the commodity and imperil the livelihoods of poor farmers. In this regard, it is important to remember that sugar is hugely important in the global economy and to consider whether sufficient evidence indeed exists to recommend restricting intake.

On the one hand, some people from the sugar industry claim that recommendations to restrict sugar consumption would lead to a decrease of income in the poorest sugar-producing countries, with consequences for labor, poverty, and development. They argue that in developing countries sugar is a relatively cheap source of calories for which few alternatives may be available (Mitchell 2004). On the other hand, economists criticize the world's current system of heavily subsidized sugar production, particularly in the European Union (EU), Japan, and the United States. Farmers in these countries receive more than double the world market price, thanks to government-guaranteed prices, import controls, and production quotas. Such high protection has over the past 30 years converted this group of countries from the Organization for Economic Cooperation and Development (OECD) in aggregate from net importers of half of the world's internationally traded sugar to net exporters. In the process, lower-cost developing-country producers have been deprived of export opportunities, a situation that is devastating livelihoods in sugar-producing countries in the developing world.

Substantial sugar subsidies have made the EU the largest exporter of white sugar, despite being one of the world's highest-cost sugar producers. Other OECD countries that heavily protect sugar producers include Mexico, Poland, and Turkey. Turkey has a higher protection regime for sugar producers than does the EU, leading to rapid production increases and periodic large exports from that country. Other developing countries, such as China, have import restrictions that generally keep domestic prices higher than world market prices. India, the world's largest sugar producer, has a heavily regulated domestic sugar market and high import tariffs to protect local producers. Kenya has high tariffs and import quotas to protect domestic producers. In light of this situation, there is an opportunity to introduce changes to sugar policy and comply with the WHO/FAO recommendation, pushing for full liberalization of the world sugar market in order to allow efficient producers to expand production and exports and consumers in protected markets to benefit from lower prices (Irz 2003).

Policy Options

The WHO/FAO report on diet, nutrition, and the prevention of chronic diseases (FAO/WHO 2003), which forms the basis for the WHO global strategy, faced the strong opposition of the sugar industry. The influence of this industry was such that sugar producers persuaded the U.S. government to lead the attack, ably supported by countries such as Cuba, Mauritius, and other sugar producers in the G-77. They managed, through heavy lobbying, to block adoption of the strategy at the WHO Executive Board meeting. One of the major arguments drew on the WHO/FAO carbohydrate report (FAO 1998), which expressed doubt about recommending a restriction on the intake of added sugars.

The G-77 were also present at the 18th Session of the FAO Committee on Agriculture, following up on the WHO/FAO report (Rome, February 9–10, 2004), where they stated: "Regretfully, it is the view of the G-77 that the WHO technical report fails the test of scientific rigor, objectivity, and fairness." They argued that the differences in diets among nations and between groups within each nation are so marked that any recommendation for the percentage distribution of food items in the diet is "like walking into a dark alley" and that any "one-size-fits-all" diet is an illusory concept. Finally, the report on the FAO Committee on Agriculture meeting stated:

> The Experts' Report defines a population nutrient intake goal for free sugars of 10 percent or less of total energy supply. The Report acknowledges that this goal might be controversial, and it has indeed prompted concerns that its adoption might have an adverse impact on sugar producers and the food industry. In practice, the impact would depend on a number of factors. Where sugar is consumed at levels far beyond the 10 percent mark, the necessary downward adjustment in domestic consumption would reduce domestic prices and revenues for beet or cane growers. More affected would be countries where natural growing conditions limit the shift towards alternative crops and where exports would have to be placed onto an already depressed world market. These difficulties would be much reduced under conditions of a liberalized sugar market characterized by lower protection of sugar production in Organization for Economic Co-operation and Development (OECD) countries. For many developing countries, a freer international sugar market could therefore open an important channel for otherwise unprofitable production and exports. In all importing countries, higher world market prices brought about by freer trade could dampen the demand for sugar.
>
> The intricacies of the world sugar markets (e.g. complex policy structures, regional trade links, and numerous preferential agreements) do not allow a simple quantification of the impacts. However, the dimensions of possible adjustments can be estimated from an examination of current consumption levels. If all of the 93 developed and developing countries where sugar consumption presently accounts for more than 10 percent of total energy supply were to reduce intake to the target level, the implied reduction in world consumption of sugar would be about 15 percent. On the other hand, if all 85 countries where consumption is below the 10 percent

mark were to increase consumption, the implied increase would more than compensate for the reduction in the "above 10 percent" countries (FAO/COAG 2004, 7).

In the recommendations for food-processing technologies and marketing systems, the report states, "Low fat, salt, or sugar products are probably the most visible response to changing needs" (page 10). Under "Specific Areas of Consideration," the report points that "FAO has responsibilities for informing and protecting food consumers as well as promoting the welfare of small-scale food producers and farmers" (page 11). The representative of the International Union of Nutritional Sciences (IUNS), representing the global nutrition science community, said that dietary limits for sugar were needed and that the FAO/WHO guidelines signaled an exciting opportunity for citrus fruit and vegetable farming: "Adopting the joint report's recommendations for increased consumption of fruit and vegetables could stimulate significant new production increases, particularly benefiting developing countries" (Reuters 2004).

Despite the controversy raised at FAO, the World Health Assembly, where member countries are represented by their health ministers, approved the WHO global strategy on diet, physical activity, and health in April 2004. This strategy includes the recommendation to restrict sugar intake to less than 10 percent of total energy intake and to reduce salt and saturated fat intake. This strategy is being implemented to varying degrees by governments, led by ministries of health, in order to cope with the increasing problem of obesity and related chronic diseases.

As mentioned, the potential decrease in sugar production of between 8 and 20 million metric tons of sugar if countries restrict consumption of added sugars to 10 percent of total calories creates an opportunity for agricultural production to shift from sugar cane to more productive crops, such as fruits and vegetables. Fruits and vegetables are much healthier than sugar and provide greater added value to farmers. They have been shown to have a positive effect in preventing chronic diseases, in particular cardiovascular diseases and some forms of cancer. The potential for fruit and vegetable production is of particular importance for developing countries that presently have problems competing with the heavily subsidized sugar produced by developed countries and the tariffs these countries impose on imported sugar.

The Brazilian example offers one potential solution to the sugar controversy by pointing the way to a new market with potential greater profitability for sugar producers. Early in the process, the Ministry of Health was working to implement the sugar recommendation of the WHO global strategy but met objections from the Ministry of Agriculture, since Brazil is an important producer of sugar cane. Presently, however, Brazil is using sugar cane as an alternative energy source, replacing almost 40 percent of imported gasoline with ethanol and exporting ethanol to several countries. Brazil used economic incentives and innovative programs, such as "biofuel clusters." The government provided grants and economic incentives for the development of industrial ethanol-processing technologies and for early adoption of ethanol as an alternative fuel. This support helped car producers, for example, incorporate carburetors that could easily shift between fuel options in cars. This policy helped create an efficient and competitive industrial base for producing ethanol as an alternative fuel. Currently, more than 70 percent of new vehicles produced in Brazil run on an ethanol-gasoline mix or on pure or almost pure (85 percent) ethanol (Koonin 2006).

In the United States ethanol is produced mainly from corn starch. The environmental consequences of ethanol production from corn have also been examined recently, considering that petroleum prices have risen faster than ethanol prices. In fact, the production of ethanol from industrially farmed and processed corn requires the burning of more carbon to achieve the same energy than petroleum production does. If in the future, however, the raw material used to produce ethanol is residual cellulose from sugar cane or young trees, there would be a net benefit in carbon sequestration because agricultural production of these crops fixes carbon in greater amounts and demands less fossil fuel energy. As the prices of fossil fuels rise, the price differential with ethanol, adjusted by the energy output, continues to narrow. In terms of both actual costs and environmental consequences, the benefits of ethanol obtained from farming are likely to continue to grow. Thus, limiting sugar in the diet, and in particular, restricting high-fructose corn syrup from beverages, may not lead to economic problems for farmers, since there is an emerging and growing demand for sugar cane as a

raw material to produce ethanol as an environmentally friendlier biofuel (Somerville 2006).

Assignment

Your assignment is to recommend a position in the sugar controversy to the government of a developing country that faces not only rapidly increasing overweight, obesity, and associated chronic diseases, but also dependence on sugar exports for foreign exchange.

Additional Readings and Recordings

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Chapter Six
Biosafety, Trade, and the Cartagena Protocol (9-6)
by Fuzhi Cheng

Executive Summary

Global production of genetically modified (GM) agricultural commodities has increased significantly in the past decade. Some people see GM crops as offering new hope in addressing some of the most serious problems that poor people in developing countries face, such as hunger and malnutrition. Others see them as creating unpredictable health and environmental problems and having negative economic repercussions.

The proliferation of domestic biosafety measures has increasingly affected international trade in GM products and led to trade disputes. Although WTO member countries can make their own decisions regarding GM products at the national level, domestic legislation must be WTO-consistent to the extent of not adversely affecting international trade. In this respect, other legal documents, notably the multilateral environmental agreements (MEAs), also play a role. The Cartagena Protocol on Biosafety is the MEA that deals with transboundary movement of GM products. The interaction between the Protocol and the WTO rules adds challenges to an already complex scenario of international trade.

A number of conflicts exist between the Protocol and the WTO rules. These conflicts boil down to the fundamental issue of which rules should prevail when trade disputes related to GM products arise. This issue lies at the heart of the perceived conflict between trade liberalization and environmental protection and was heatedly debated among different interest groups during the negotiation of the Protocol.

The "Miami Group," representing major agricultural exporters including the United States, holds the view that the WTO agreements are the only law applicable in resolving trade disputes over GM products. They fear that non-WTO agreements (such as the Protocol) may give an importing country excuses to limit trade in GM products. Potential loopholes in the Protocol could also allow a country to favor domestic GM production over imports, or GM product imports from some countries over others. The Miami Group thus favors the inclusion in the Protocol of a "savings clause," which could, in effect, save provisions of the WTO agreements from being overcome by those of the Protocol.

The European Union (EU) and most developing countries, on the other hand, argue that the Protocol should be invoked in defense against WTO claims. They support a comprehensive Protocol in light of the unknown effects of GM products on the environment and human health. Because food scandals in recent years have deeply shaken consumer trust in food safety, the EU in particular calls for a strong statement of the precautionary principle as provided in the Protocol.

To resolve its potential conflicts with the WTO provisions, the Protocol contains a "savings clause," which recognizes the importance of existing international agreements. Meanwhile, it calls for the mutually supportive functioning of trade and environmental agreements with a view to achieving sustainable development. The Protocol also provides different procedures and documentation requirements in dealing with different types of living modified organisms (LMOs).

Your assignment is to recommend changes in either the Protocol or the WTO agreements that would mitigate the conflicts between GM commodity trade and environmental protection, taking into account the positions of the key stakeholder groups.

Background

Biotechnology and GM Crops

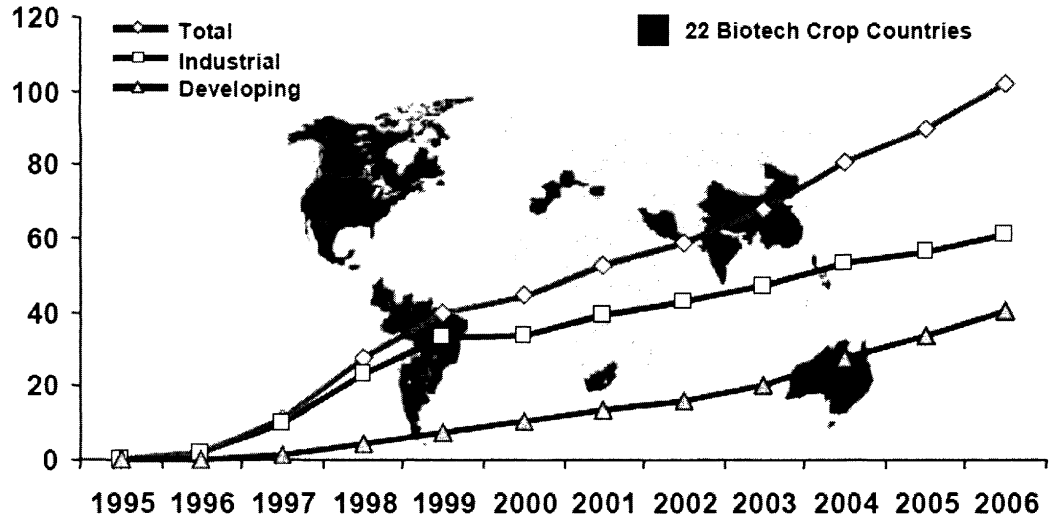
Modern biotechnology has enabled human beings to change the characteristics of living organisms through in vitro nucleic acid techniques, including recombinant deoxyribonucleic acid (DNA) and

direct injection of nucleic acid into cells, and through transfer of genetic information from one organism, across species boundaries, into another organism. Compared with conventional methods of plant and livestock selection and improvement, modern biotechnology can identify desirable traits more quickly and accurately and allows gene transfers beyond the taxonomic family, a process that is impossible with traditional breeding. The application of modern biotechnology in sectors such as agriculture and medicine has led to the creation of genetically modified organisms (GMOs) and products derived from them.

Recent advances in biotechnology have significantly enhanced global production of GM agricultural commodities (Figure 1). In 2006 the estimated global GM crop area was more than 100 million hectares, distributed among 22 countries and cultivated by approximately 10.3 million farmers. The United States is by far the largest GM commodity producer by area, with 54.6 million hectares planted in 2006 (Table 1). Industrial countries that are major agricultural exporters, like Australia and Canada, as well as many developing countries have also adopted these technologies. Altogether, developing countries account for more than one-third of total world GM crop area. The largest GM crop-producing developing country is Argentina, with a crop area of 18 million hectares in 2006. Other developing countries, including Brazil, China, India, and Paraguay, have significantly expanded their crop area in recent years. In these countries, maize, soybeans, and cotton have been the major GM crops to date, with active research on other crops under way.

Biotechnological improvements and increases in GM crop production present significant opportunities for developing countries. At present, the perceived benefits of GM crops originate from their input traits, such as better weed and insect control, higher productivity, and more flexible crop management. Thus, the so-called first-generation GM crops benefit mainly farmers, who can obtain higher yields, lower costs, or both. For them, the estimated economic gains amounted to US$5.6 billion in 2005 according to a recent survey (James 2006). Consumers can also benefit from this generation of GM crops primarily through lowered food prices.

Figure 1: Global Area of Biotech Crops, 1995–2006 (million hectares)



Source: James 2006.

Table 1: Area Planted to Biotech Crops, by Country, 2006

Rank	Country	Area (million hectares)	Biotech Crops
1	United States	54.6	Soybean, maize, cotton, canola, squash, papaya, alfalfa
2	Argentina	18.0	Soybean, maize, cotton
3	Brazil	11.5	Soybean, cotton
4	Canada	6.1	Canola, maize, soybean
5	India	3.8	Cotton
6	China	3.5	Cotton
7	Paraguay	2.0	Soybean
8	South Africa	1.4	Maize, soybean, cotton
9	Uruguay	0.4	Soybean, maize
10	Philippines	0.2	Maize
11	Australia	0.2	Cotton
12	Romania	0.1	Soybean
13	Mexico	0.1	Cotton, soybean
14	Spain	0.1	Maize

Note: Table lists the largest 14 countries with growing area greater than 50,000 hectares.
Source: James 2006.

The newly developed second-generation GM crops with applications for output traits (such as vitamin A in golden rice) are expected to benefit consumers even more. A number of GM products are being developed to provide edible vaccines and micronutrients so that they can be delivered to the poor in a more affordable way (Mackenzie and McLean 2004). In addition, expansion in international trade in GM crops can lead to significant welfare gains for developing countries (Anderson and Nielsen 2000). In general, GM crops offer the developing world hope for better food security and better health and nutrition.

Modern biotechnologies and the resulting products have not, however, come without doubt and controversy. There are many fears linked to perceived threats of biotechnology to human, animal, and plant life and health, to the conservation of biodiversity, and to the environment at large. For example, some researchers have raised concerns that genetic modifications might produce foods that contain toxins, trigger allergies, or lead to antibiotic resistance. Others have asserted that GM crops can adversely affect poor economies because they might disrupt small-scale farming systems and encourage monoculture or create a monopolistic market structure in which foreign biotechnology companies can limit poor farmers' access to seeds. Still others have raised ethical and religious concerns that these technologies enable human beings to play God. Perhaps the most serious concerns are those related to the environmental impacts of transgenic plants, which may transmit their genes to other crops or wild plants through pollen dispersal or may evolve into invasive species as their superior traits allow them to out compete other plants. Although there is not yet any definite scientific evidence of harm from GM products to humans, animals, or the environment, many agree that more extensive research may reveal such risks.[1]

A surge of public concern about GM products has swept from the EU to Asia since the late 1990s, and consumers and environmental groups have insisted on stronger government controls on biotechnology and products created from it. Countries' regulatory approaches, however, differ

[1] A few studies, like the one on the monarch butterfly, suggest possible negative impacts of GM products on the environment, but again these findings are controversial.

drastically depending on factors such as their policy awareness, the level of risk they perceive and are willing to accept, their capacity to carry out risk assessments and implement adequate legislation, their perception of the benefits of biotechnology, their concerns about traditional nonbiotechnology industries, their dependence on agricultural exports, their reliance on food aid, and the investments they have already made in the sector (Zarrilli 2005). National legislation on biotechnology and GM products ranges from "limited regulation" in many developing countries (addressing certain aspects of biosafety), to "specific regulation" in the EU (involving pre-marketing approval and mandatory labeling regimes for GM products), to "existing regulation" in the United States (simply applying the instruments developed for conventional foods) (Eggers and Mackenzie 2000).

The Cartagena Protocol

The Cartagena Protocol on Biosafety (hereinafter, the Protocol) adopted on January 29, 2000, is the first binding international agreement dealing with modern biotechnology and GM products.[2] It was negotiated under the auspices of the Convention on Biological Diversity and specifically focused on the transboundary movement of GM products, referred to in the Protocol as "living modified organisms" (LMOs). The LMOs include "all living modified organisms that may have adverse effects on the conservation and sustainable use of biological diversity, taking also into account risks to human health" (Article 4).

The Protocol distinguishes two major categories of LMOs: LMOs for voluntary introduction into the environment, such as seeds for planting, live fish for release, and microorganisms for bioremediation; and LMOs intended for direct use as food or feed or for processing (LMO-FFPs).[3] The latter category contains the large majority of LMOs, including genetically modified crops like soybeans, maize, canola, and cotton. The Protocol does not cover consumer products derived from LMOs, such as corn flakes, flour, and seed oil (Article 3) or pharmaceuticals addressed by other relevant international agreements or organizations (Article 5).

The Protocol defines two major sets of procedures for safely moving LMOs across borders: an Advance Informed Agreement (AIA) procedure for LMOs that are to be intentionally introduced into the environment (Article 7), and a simplified procedure for LMOs that are intended to be used directly as food or feed or for processing (Article 11). Parties to the Protocol must ensure that LMOs are handled, packaged, and transported under safe conditions. Furthermore, LMOs moving across boundaries must be accompanied by documentation specifying, among other things, the identity of the LMOs and a contact point for further information. These requirements are designed to provide importing parties with the information needed to make informed decisions about whether or not to accept LMO imports and how to handle them in a safe manner.

The Protocol stipulates that the importing country must make its decisions in accordance with scientifically sound risk assessments (Article 15). In its annex, the Protocol sets out principles and methodologies on how to conduct a risk assessment. In case of insufficient relevant scientific information and knowledge, the party of import may use precaution in making its decisions about importing (Article 1 and 10). Parties may also take into account, consistent with their international obligations, socioeconomic considerations in reaching decisions on import of LMOs (Article 26).

Parties must also adopt measures for managing any risks identified by the risk assessment, and they must take necessary steps in the event of accidental release of LMOs (Article 16). To facilitate its implementation, the Protocol establishes a Biosafety Clearing-House for Parties to exchange information and contains provisions for capacity building, a financial mechanism, compliance procedures, and requirements for public awareness and participation.

Relevant WTO Rules

The Protocol is not the only international law that deals with transboundary movement of GM products. Two WTO agreements—the Agreement

[2] The Cartagena Protocol is a protocol of the Convention on Biological Diversity (CBD), Article 19.3 of which provides for parties to consider the need for and modalities of a protocol on the safe transfer, handling, and use of LMOs that may have an adverse effect on biodiversity. Negotiation of the Protocol started in 1996 in Aarhus, Denmark, and the draft was completed in 1999 in Cartagena de Indias, Colombia. The final text was adopted in Montreal, Canada, in 2000 (see Schweizer 2000 for an overview of the negotiation process).

[3] The Protocol also defines LMOs in transit and for contained use but does not specify particular procedures for handling them (Article 6).

on the Application of Sanitary and Phytosanitary Measures (SPS Agreement) and the Agreement on Technical Barriers to Trade (TBT Agreement)—are also relevant to the trade in LMOs defined in the Protocol. The SPS Agreement, with its purpose of protecting human, animal and plant life and health, applies to all the sanitary and phytosanitary measures that may directly or indirectly affect international trade (Article 1). Restrictions on the trade in LMOs in the SPS Agreement include those related to product quarantine, testing, packaging and labeling. The TBT Agreement applies a similar set of technical barriers to the import of LMOs, but with purposes other than environmental or human health protection. Rather, these barriers are imposed to inform consumer or to protect a state's culture or economy.

Pursuant to the SPS Agreement, a member has a right to take sanitary and phytosanitary measures only to the extent necessary to protect human, animal, and plant life or health, and the measures should be based on scientific principles and should not be maintained without sufficient scientific evidence (Article 2). The SPS Agreement also prohibits discrimination, so that SPS measures may not arbitrarily or unjustifiably discriminate between members where identical or similar conditions prevail and may not be applied in a manner that would constitute a disguised restriction on international trade (Article 2). Similarly, the TBT Agreement stipulates that WTO members may not to discriminate against imports through their technical regulations and standards, and technical regulations may not be more trade-restrictive than necessary to fulfill a legitimate objective (Article 2).

The SPS Agreement includes a precautionary clause stating that in cases where relevant scientific evidence is insufficient, a member may "provisionally" adopt sanitary or phytosanitary measures on the basis of available pertinent information (Article 5). In such circumstances, however, a member has a continuing obligation both to obtain the additional information necessary for a more objective assessment of risk and to review the sanitary or phytosanitary measure accordingly within a reasonable period of time.

A Recent GMO Case

In May 2003 Argentina, Canada, and the United States initiated a complaint before the WTO against the EU's restrictive measures on approval and marketing of biotech products (WT/DS291, WT/DS292, and WT/DS293). Regarding EU-level measures, the complainants asserted that the moratorium (both general and product-specific) applied by the EU since October 1998 on the approval of biotech products had restricted their exports of agricultural and food products. The complainants also asserted that a number of individual EU member states maintained national marketing and import bans on biotech products even though those products had already been approved by the EU for import and marketing. The EU moratorium was subsequently lifted, but owing to consumer rejection, the EU food market has remained closed to genetically modified organisms (GMOs), and several member states have kept their national bans in place.

The final ruling issued on September 29, 2006, concluded that general and product-specific moratoria had led to an "undue delay" in the completion of the EU's approval procedures for biotech products, thus breaching the EU's obligations under the WTO's SPS Agreement (WT/DS291/R, WT/DS292/R, and WT/DS293/R). The panel requested the EU to bring the moratoria in line with the provisions of the SPS Agreement "if, and to the extent that" these measures have "not already ceased to exist." The panel also rejected the EU's defense of the national-level bans as precautionary measures, arguing that sufficient scientific evidence was in fact available to carry out an adequate risk assessment.[4] The panel report called on the EU to bring the measures in conformity with WTO rules. This conformity would imply revoking the national-level bans or providing an SPS Agreement–compliant risk assessment justifying the measures.

Farmers' groups and biotechnology industries in the three complainant countries welcomed the panel's ruling. They described it as trade facilitating and favoring science-based policy-making over the unjustified, anti-biotech policies. The EU appeared indifferent about the ruling, suggesting that it would have few implications for its current rules and procedures since the moratoria in the EU had already been lifted before the ruling. Several civil society groups, including Friends of the Earth Europe (FOEE), the Institute for Agricultural Trade Policy (IATP), and Greenpeace, sharply criticized

[4] Article 5.7 of the SPS Agreement only permits WTO members to "provisionally" adopt SPS measures in the absence of sufficient evidence.

the panel's decision for undermining international environmental law and the precautionary principles.

These groups were also concerned that the WTO dispute settlement process was biased towards the will of powerful members. In the GMO case, the panel refused to take into account the Cartagena Protocol or the Convention on Biological Diversity because the parties to the dispute were not also parties to the agreements.[5] Yet, in the famous "shrimp-turtle" case (WT/DS58/AB/R), the panel did refer to international environmental agreements that the United States had not signed in support of the U.S. argument for restricting its shrimp trade.[6] Following the GMO case ruling, many environmentalists concluded that the WTO should no longer be the appropriate institution to deal with environment-related trade issues and that the international community should find an alternative mechanism for dispute settlement before another case occurs (Greenpeace 2006)

Policy Issues

Potential Conflicts between the Protocol and WTO Rules

There are two major potential sources of conflicts between the Protocol and the WTO rules (Safrin 2002). First, both the Protocol and the relevant WTO agreements contain "precautionary language" that allows a party to impose import bans or other restrictions on LMOs when there is a lack of scientific certainty about the extent of their potential adverse effects (that is, when proper risk assessment is not possible). Unlike the WTO Agreements, however, the Protocol does not require that precautionary measures be adopted "provisionally." In other words, the Protocol does not expressly require a party that takes precautionary measures in the face of scientific uncertainty to seek to obtain the additional information necessary for a more objective assessment of risk and to review those measures within a reasonable period of time, as required by Article 5 of the SPS Agreement. Rather, the Protocol only requires that the precautionary measures be taken "as appropriate" (Article 10) and that a review be conducted only at the request of the party of export (Article 12). The wording in the Protocol tends to give a country attempting to avoid its WTO obligations ample room to argue for the legitimacy of its restrictive trade measures on LMOs.

Second, the Protocol contains a number of discretionary provisions that permit a party to take discriminatory actions that could violate the party's WTO obligations. For example, Articles 10 and 11 of the Protocol provide that a party of import shall make a decision on the import of different LMOs but does not compel a particular decisional outcome. In addition, parties can proceed according to their own domestic regulatory framework (Article 9) or adopt simplified procedures (Article 13) as long as these are consistent with the objectives of the Protocol. Moreover, Article 14 of the Protocol permits parties to enter into bilateral and multilateral agreements that would govern the trade in covered LMOs, in lieu of the Protocol itself, "provided that such agreements and arrangements do not result in a lower level of protection than provided for by the Protocol." If a party to both the Protocol and the WTO agreements allows the import of a given LMO from one WTO member but not from another, permits the domestic production but not the import of a given LMO, or enters into a regional agreement exempting imports of LMOs from countries in that region from regulatory scrutiny, while it continued to subject the import of like LMOs from other countries to regulatory review, its action would be allowed by the Protocol but would clearly violate the WTO agreements.

Protocol or WTO Agreements?

Given the potential conflicts between the Protocol and WTO rules, one fundamental question is how to deal with the relationship between the two: when trade disputes on GM products arise, should the requirements of the Protocol or those of the WTO agreements prevail? This issue lies at the heart of the perceived conflict between trade liberalization and environmental protection. Some (such as environmentalists) have suggested that the WTO

[5] The United States is not a party to the Convention on Biological Diversity or the Protocol. Argentina and Canada are parties to the Convention but not to the Protocol.

[6] Despite the quotation of international environmental laws for defending its trade measures, the United States still lost the case because it failed to apply the most-favored nation (MFN) principle. The United States provided countries in the Western Hemisphere—mainly in the Caribbean—with technical and financial assistance and longer transition periods for their fishers to start using turtle-excluder devices (TEDs). It did not, however, give the same advantages to the four Southeast Asian countries (India, Malaysia, Pakistan, and Thailand) that filed the complaint with the WTO.

should stand back from biotechnology and leave such decisions to multilateral environmental agreements (MEAs) like the Protocol. But since biotechnology has been increasingly linked to trade, it is likely that in the event of a dispute, major exporters would favor the WTO rules.

It is also a legally complicated issue. According to the Vienna Convention on the Law of Treaties (Article 30), the requirement is that a later agreement would prevail when two successive agreements relating to the same subject matter are incompatible. The same Convention stipulates that when the later treaty includes only some of the parties to the earlier treaty, the later treaty prevails only with respect to those who are parties to both agreements. Otherwise the earlier treaty applies.[7] For parties to both agreements, the presumption that the later agreement prevail over an earlier one can be overcome if the later explicitly states that it "is not to be considered as incompatible with an earlier agreement" (as stated in Article 30 of Vienna Convention on the Law of Treaties). When an agreement contains such a statement, the terms of the earlier agreement prevail over incompatible terms of a later agreement. Such a statement is commonly referred to as a savings clause because, in effect, it saves provisions of the earlier agreement from being overcome by incompatible terms in a later agreement.

Whether or not to include a "savings clause" is one of the most debated issues in the negotiations of the Protocol. Major agricultural exporters like the United States strongly support the inclusion of this clause. They fear that without such a clause, countries might make arbitrary decisions restricting their import of LMOs without scientific evidence by simply referring to the Protocol and arguing in the vague name of "precaution," or they might favor domestic LMO production over imports or favor LMO imports from some countries over others through their unilateral, bilateral, or regional trade arrangements. Given the uneven development of biotechnology across nations, it would not be surprising for some countries to use unfettered bans on the import of LMOs to allow their nascent domestic biotechnology industries to catch up with industry leaders and at the same time protect their nonbiotechnology industries from competition with biotechnology ones. A savings clause in the Protocol would render these acts subject to WTO disciplines.

The EU strongly objected to including a savings clause in the Protocol. Ostensibly, they argue that the provisions in the Protocol are not expected to modify other agreements and thus need not expressly so state. The real reason for the EU's rejection of the saving clause, however, is that, in the face of a new technology and novel products derived from it, they want the Protocol to give them enough flexibility to protect environment and human health without facing challenges from the WTO disciplines. The EU's position on the savings clause grew even stronger following its loss in the WTO beef hormone case against Canada and the United States.[8] As recent food scandals have deeply shaken consume trust in food safety in the region, the EU needed stronger precautionary language in the Protocol so that they could tighten domestic regulations to pacify its suspicious and sometimes angry public.

The Scope of the Protocol

Besides its relationship with the WTO rules, there are also controversies over the Protocol itself. One contentious issue is what kind of LMOs the Protocol should cover. Given the ever-increasing variety and production of GM products and their growing importance in international trade, the product scope of the Protocol is crucial for identifying the portions of trade that will be regulated. Some countries demanded strong notification procedures giving importing countries extensive rights to refuse the import of a full range of GM products, including GM commodities and products derived from them. Other countries were concerned that including all GM products within the purview of the Protocol would render international trade in agricultural commodities unworkable. They argued that lengthy approval procedures (like the AIA procedure) are not justified for commodities, which are not intended to be released into the environment and hence would not affect the conservation and sustainable use of biological diversity.

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[7] According to this explanation, since the United States is not a party to the Biodiversity Convention or the Protocol, earlier agreements (that is, the WTO agreements) would prevail should an LMO-related trade dispute arise between the United States and other countries.

[8] The hormone case related to an EU ban on bovine meat and meat products from cattle treated with growth hormones. Complainants were Canada (WT/DS48) and the United States (WT/DS26).

Another issue is related to whether and how LMOs should be documented. The Protocol does not address domestic food-labeling requirements for consumer information but does establish standards for documentation accompanying LMOs that are moving across international borders. Whether the documentation provisions should apply to all LMOs or a portion of them has been actively debated. Because clear identification of each shipment is a key element for the traceability of GMOs and for the feasibility of domestic labeling regimes, the EU insisted on such requirements for all LMOs. The United States, however, objected to specific identification requirements for all LMOs because doing so requires identity preservation all along the supply chain, which will significantly increase costs. In addition, labeling would have an adverse impact on consumer choice because consumers would perceive the labeling as an indication that GM foods pose potential health and environmental risks (Runge and Jackson 2000).

Human health and economic issues are also debated in the negotiation of the Protocol. Specifically, these questions include whether and how the Protocol should take into account human health in addition to the environmental impact of LMOs; whether and how import bans or other restrictions should be based on socioeconomic considerations in addition to environmental ones; and whether and how the Protocol can create a liability and redress mechanism for any economic loss resulting from the transboundary movements of LMOs. The question of "whether" had more or less been settled by the time of the Montreal meeting: most countries were in favor of the inclusion of provisions on human health and economic issues because they believe that if these provisions were eventually exercised, then by definition there must have been a need for them and if they were never exercised, there would have been no harm in including them. The questions of "how" were largely unsolved even after the adoption of the Protocol.

Stakeholders

The Miami Group

The "Miami Group" represents some major exporters of GM seed and crops and countries with the world's most advanced biotechnology industries.[9] The group was led by the United States and also included Argentina, Australia, Canada, Chile, and Uruguay. It is the group's common interest to seek free trade in GM products and to preclude the use of environmental protection as a disguised trade barrier. In the negotiation of the Protocol, the Miami Group insisted that 1) LMO–FFPs be kept outside the scope of the Protocol's AIA procedure; 2) a "savings clause" be included in the Protocol; 3) decisions on trade measures be based on risk assessments and "sound science"; and 4) the use of the precautionary principle and socioeconomic considerations in decision making be limited. Because the EU had resorted to the precautionary principle in defending the beef hormone case and in blocking Canadian and U.S. requests for regulatory approvals of certain LMOs, the Miami Group was suspicious about whether the EU would use the Protocol to further justify its WTO-inconsistent trade measures.

The Like-Minded Group and the EU

The "Like-Minded Group" is a developing country negotiating coalition (excluding the three developing countries in the Miami Group). Countries in this group range from those with no domestic regulatory structures, legislation, or biotechnology industries to those with fairly developed systems. The Like-Mined Group generally perceived themselves as importers rather than exporters of GM products, and thus, they supported a strong Protocol, in light of the unknown effects of LMOs on the environment and human health as a result of their inadequate regulatory or institutional capacity. During the negation, the Like-Minded Group called for the Protocol to 1) cover a comprehensive scope of organisms, including LMO–FFPs; 2) take into account human health and socioeconomic consider ations; 3) require comprehensive identification and documentation; and 4) include a strong statement of the precautionary principle and a concrete text on liability and redress.

Countries in the EU negotiated as a common bloc because of their shared interests. Similar to the Like-Mined Group, the EU also demanded a strong Protocol. As most of the EU countries had had well-established food safety regulatory systems prior to the adoption of the Protocol, the pressure for a more protective international law came primarily from the concerned public as a result of

[9] The description of stakeholders in this section is based on Cosbey and Burgiel (2000).

recent food safety crises. Specifically, the EU had pushed for 1) inclusion of LMO-FFPs but with possible special treatment; 2) identification and documentation for all LMOs; 3) exclusion of a savings clause;[10] and 4) strong language on the precautionary principle.

The Compromise Group and Central and Eastern European (CEE) Group

The Compromise Group (Japan, Mexico, Norway, Singapore, South Korea, Switzerland, and, at the Montreal meeting, New Zealand) and CEE Group emerged during the final days of the Cartagena negotiations with the specific intent to bridge the major gaps between the other negotiating groups by developing compromise positions and alternative formulations. These two groups represented the interests of a diverse set of countries and provided additional impetus for addressing the range of concerns of both developed and developing countries.

Policy Options

Reconciliation—A Savings Clause

To resolve its potential conflicts with the WTO provisions, the Preamble of the Protocol provides a sort of "savings clause," which reads as follows:

> *Recognizing* that trade and environment agreements should be mutually supportive with a view to achieving sustainable development,
>
> *Emphasizing* that this Protocol shall not be interpreted as implying a change in the rights and obligations of a Party under any existing international agreements,
>
> *Understanding* that the above recital is not intended to subordinate this Protocol to other international agreements, . . .

This language, which was adapted from the Preamble to the 1998 Rotterdam Convention, does not express an explicit rule for determining which agreement or agreements to use in case of disputes. In particular, the ambiguity leaves unclear its relationship with the WTO agreements. Some find that the Preamble, in effect, contains no savings clause because it "is not intended to subordinate this Protocol to other international agreements." Therefore, should disputes on trade in LMOs arise, the Protocol would be the applicable law, not the WTO agreements.

Others argue that the Preamble effectively preserved parties' rights and obligations under other agreements since the Protocol "should not be interpreted as implying a change in the rights and obligations of a Party under any existing international agreements." Under this view, rules of the WTO or other customary international law, environmental and human rights conventions, or regional and bilateral agreements to which disputing parties are bound could all be invoked.

This issue is further complicated by the fact that major GMO producers and exporters such as the United States are still nonparties to the Convention on Biological Diversity and to the Protocol. In this situation, the WTO agreements would more likely be the law applicable in WTO dispute resolution, because if the WTO panel or the Appellate Body base their judgment on a non-WTO provision (such as the Protocol), the defendant may decline jurisdiction by arguing that such a provision does not apply to non-parties. The recent U.S.-EU GMO dispute settlement is a case in point.

To better avoid possible conflicts, WTO legal documents need to develop ways of referring to the Protocol, to open a door toward "cross-fertilization of international law" and "co-operative fact-finding" (Eggers and Mackenzie 2000, 541). In practice, a WTO panel should seek various ways to combine the use of WTO rules with that of the provisions in the Protocol. For example, in a GMO dispute on a precautionary measure, the WTO panel, when interpreting the precautionary language of the Protocol, could require the party of import to implement restrictive trade measures "provisionally" by referring to Article 5.7 of the SPS Agreement. In addition, the panel could take account of the "fact-finding" under the Protocol when determining whether scientific evidence is insufficient or whether a provisional measure is based on available pertinent information, as required by the SPS Agreement.[11]

[10] The EU instead supported the inclusion of a nondiscrimination provision, stating that countries would not discriminate among domestically produced LMOs and those being imported.

[11] As shown earlier, the Protocol does not require a trade restriction to be adopted "provisionally" as required by the SPS Agreement. However, the Protocol requires the exporting country to provide scientific evidence and to

Precautionary Action

The Protocol reserves the right of the parties to make decisions on imports on the basis of the precautionary principle in relation to both LMOs to be introduced into the environment and LMO-FFPs. It states that lack of scientific certainty due to insufficient relevant scientific information and knowledge regarding the extent of potential adverse effects of an LMO shall not prevent a party of import from making a decision with regard to the import of that LMO in order to avoid or minimize such potential adverse effects.

Although the Protocol endorses the right of parties to make a precautionary decision to avoid or minimize the potential adverse effects of LMOs on biodiversity, countries should refrain from abusing it to the extent that normal trade is unnecessarily restricted. The most appropriate precautionary action should be a function of the level of identified harm, the extent of uncertainty, and the availability of alternative technologies, as well as the agricultural, social, environmental, and economic goals of individual parties. Possible forms of precautionary action range from bans on new LMOs to phasing out of existing LMOs, moratoria on future development and commercialization, and conditional approvals with monitoring.

Different Treatments

Although the Protocol *prima facie* covers all LMOs that may have adverse effects on the conservation and sustainable use of biological diversity, it provides different procedures in dealing with different types of LMOs. The AIA procedure is confined to LMOs for intentional introduction into the environment of the party of import. It does not apply to LMO-FFPs. For example, if seeds of GM maize are exported for the purpose of field trials, the party of import needs to be notified with sufficient information by the exporter and the shipment should be approved in advance as required by the AIA. However, if the GM maize is intended for use as food and animal feed, the exporter would not need to obey the strict notification requirements established by the AIA.

For the LMO-FFPs, which make up the bulk of trade in GM products, a more simplified procedure is necessary. As outlined in Article 11, exporters are obliged only to provide documentation indicating that the shipment "may contain LMOs" and is not intended for intentional introduction into the environment. This simple documentation requirement would render trade in GMOs more operational, but add little to the traceability of GMOs and the feasibility of domestic labeling.

Human Health and Socioeconomic Considerations

In addition to the environmental impacts of LMOs, the Protocol was able to take into account human health risks, which were confined to those originating from biodiversity impacts and direct contact (allergenic reactions), rather than risks on food safety grounds, which are expected to be addressed in the SPS Agreement. Article 26 allows parties to take socioeconomic considerations into account when reaching a decision on whether to import an LMO, but only insofar as they arise from the impact of LMOs on the conservation and sustainable use of biodiversity and the value of biodiversity to indigenous and local communities. Additionally, when taking such socioeconomic considerations into account, a party must act consistently with its other international obligations (Article 26).

The set of human health and socioeconomic considerations is of limited scope and represents a compromise between parties in the decision making on LMO imports. The considerations as stated in the Protocol are only confined to those related to direct impacts or losses. In reality, however, indirect impacts and losses may be more significant. Given the newness and scientific uncertainty of biotechnology and the fact that the population, economy and the environment in poor developing countries are vulnerable to adverse LMO impacts, a more broadly defined human health and socioeconomic considerations would benefit them better.

Liability and Redress

It is important to include a liability and redress provision in the Protocol so that parties of export can be held accountable when LMOs cause damages to the parties of import. Despite the importance of the issue, its treatment in the Protocol was postponed. An enabling clause in Article 27 of the Protocol states that "the Conference of the Parties to this Protocol shall, at their first meeting, adopt a process with respect to the appropriate elaboration of international rules and procedures in

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carry out risk assessment. Annex III of the Protocol contains more specific definitions and guidelines on risk assessment than the SPS Agreement.

the field of liability and redress for damage resulting from transboundary movements of LMOs" and "shall endeavor to complete this process within four years." Accordingly, the first meeting of the Conference of the Parties serving as the meeting of the Parties to the Protocol (COP-MOP) held in 2004 in Kuala Lumpur, Malaysia, established an Open-ended Ad Hoc Working Group of Legal and Technical Experts on Liability and Redress to fulfill the mandate under Article 27.

Major tasks undertaken by the working group to date include reviewing the information relating to liability and redress for damage resulting from transboundary movements of LMOs; analyzing general issues relating to the potential or actual damage scenarios and the application of international rules and procedures on liability and redress to the damage scenarios; and elaborating options for elements of rules and procedures on liability and redress, including definition and nature of damage, valuation of damage to biodiversity and to human health, threshold of damage, causation, channeling of liability, roles of parties of import and export, standard of liability, mechanisms of financial security, and right to bring claims. The working group is scheduled to report on its activities to the COP-MOP and complete its work in 2007.

Assignment

Your assignment is to recommend changes in either the Protocol or the WTO agreements that would mitigate the conflicts between GM commodity trade and environmental protection, taking into account the positions of the key stakeholder groups.

Additional Readings

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Chapter Seven
Coffee, Policy, and Stability in Mexico (9-7)
by Beatriz Ávalos-Sartorio

Executive Summary

The fact that poor people will resort to violence to change the political and economic system that they believe is responsible for their poverty is not new. The link between poverty, violence, and instability has started to figure prominently in the agenda of strategic discussions in global fora and national governments, sparked by the increased sense of threat from terrorism felt by societies in developed countries. Analysts seem to agree that poverty, combined with a long list of factors, including ethnic disparities, social and economic inequalities, and resource disputes, can prepare the ground for conflict.

Although poverty itself does not cause violent conflict, it does provide a basis for it. This case study is about the probable link between poverty and violent social uprisings in rural Mexico. It illustrates how the sudden exacerbation of poverty and exclusion, provoked largely by the implementation of market liberalization policies, may have been the trigger that led thousands of people to turn to violent rebellion against the rule of law, with immense and far-reaching social, economic, and political costs.

In the early 1990s, coffee-producing populations in southern Mexico, already living in poverty and in generally marginal conditions, suddenly and simultaneously experienced a precipitous reversal of cash flows and an alteration in their usual paths of economic exchange. These changes resulted partly from an institutional change that happened too fast. The 1989 collapse of the International Coffee Agreement and the 1990 dismantling of the Mexican Coffee Institute triggered a sudden drop in coffee prices and disarray in domestic coffee markets that destabilized the economies of thousands of coffee-producing households.

This case study argues that the suddenness and magnitude of the so-called coffee crisis that ensued may help explain when, how, and why two paramilitary armies with strong backing from the local population made their first public and violent appearance in the Mexican countryside in the mid-1990s. Through this real-life example, this case study aims to stimulate thinking about what went wrong with policy and discussion on what can be done, or done better, by stakeholder groups to achieve both poverty and stability goals.

The assignment is to identify key lessons learned for the design and implementation of government action in situations similar to the one described in this case.

Introduction

"Poor people will resort to violence ... to change the political and economic system that they believe is responsible for their poverty" (Ferraro 2003, 6).

The hypothesis posed in this case study is that the sudden exacerbation of poverty and exclusion may constitute a "trigger" for a people's acceptance of violent means and their rebellion against the order of law. This case study is about how coffee-producing populations in southern Mexico, already living in poverty and in generally marginal conditions, suddenly and simultaneously suffered a further economic setback. Two simultaneous crises destabilized the economies of thousands of coffee-producing households. First, producers experienced a precipitous reversal of cash flows, partly provoked by an institutional change that happened too fast. Second, they faced a drastic alteration in their usual paths of economic exchange.

In her 1998 book on the remaking of Mexico's economy, Nora Lustig links the rise in rural violence in southern Mexico during the 1990s to the increased poverty of its inhabitants. This case study documents Lustig's assertion and claims that this may help explain how and why, during the 1990s, two paramilitary armies, or guerrillas,[1] made

[1] The Spanish term *guerrilla* means "small war." The sense in which the term has been used to describe these two

their first public and violent appearance in the Mexican countryside. It was the suddenness and the magnitude of these two crises that helped trigger action by the Ejército Zapatista de Liberación Nacional (EZLN) in the state of Chiapas and the Ejército Popular Revolucionario (EPR) in the state of Oaxaca. Although some authors (such as Cano 1996 and Pazos 1994) claim that both uprisings were the result of manipulation of "susceptible" indigenous populations by well-organized groups with ulterior, mainly political, motives, this case study argues that years of exclusion and poverty provided fertile soil for this "susceptibility." The cash flow and transition crises were the rain that helped the latent seed of discontent germinate into a supply of willing, if naïve, recruits from the local population. If imagining scenarios based on hypothetical counterfactuals is useful, we should ask ourselves whether both guerrilla movements, and the tremendous social and economic costs they imposed, could have been averted had the Mexican government made different policy choices. The assignment is to identify the "right" policy choices.

Background

Coffee, Poverty, and Wealth

Coffee represents an important source of income for some 481,000 Mexican households that cultivate 665,000 hectares of coffee and hire at least 1 million laborers annually. It is estimated that some 3 million mostly rural people are employed in activities related to coffee production, processing, and sales—approximately 6 percent of the economically active population of Mexico and close to a quarter of the economically active rural population. A labor-intensive crop, coffee grows well on small and steeply sloped parcels of land. Small-scale producers, often with landholdings smaller than 3 hectares, constitute the majority of coffee producers in the country and are concentrated in some of its poorest regions. The major producing areas are mountainous, with poor communications infrastructure, and some 84 percent of the communities in which coffee is a primary agricultural activity have high or very high poverty indexes. Sixty percent of coffee producers live in extreme poverty, and more than half belong to one of Mexico's 52 ethnic groups. Chiapas and Oaxaca, two major coffee-producing states, have the lowest level of welfare in Mexico.

The situation in Chiapas is archetypical: almost 60 percent of its population lives in rural areas, almost 40 percent in housing with earthen floors, and more than 22 percent of the population above the age of 15 is illiterate (the average for Mexico is less than 10 percent). In Chiapas, coffee is second only to corn in terms of cultivated area. It is the state's main export crop and the major source of income for almost 25 percent of the economically active population. Official statistics reveal that in Chiapas alone, some 500,000 people are employed by the coffee sector, and of these, 120,000 are coffee producers, mostly with landholdings smaller than 2 hectares (CMC 2004; Eakin et al. 2005; Hernandez-Navarro and Celis-Rojas 1994; Milford 2004; Pérez-Grovas et al. 2001; Style 2001).

Ironically, despite the clear link between poverty and coffee, a significant proportion of the harvest is exported. Indeed, in 1990, Mexico was the fourth-largest producer in the world (Renard 1997), and coffee exports generated enormous wealth for the national economy. That year, coffee was the country's third-largest source of foreign exchange (after petroleum and automobiles), representing 3 percent of the country's total export earnings and 42 percent of total agricultural exports (Pérez-Grovas et al. 2001).

Two major events caused a drastic decline in Mexico's strength in the world coffee market, and in coffee's strength as foreign exchange earner in the Mexican economy. The first was the collapse in 1989 of the International Coffee Agreement (ICA) managed by the International Coffee Organization (ICO), and with it, the primary international mechanism for controlling world coffee supplies

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movements corresponds to Karsner's (2005) definition. According to him, the fact that the guerrilla soldier selects military and government targets differentiates him or her from the "terrorist," who generally selects noncombatant civilian and nongovernmental targets for a different kind of psychological impact. He cites Robert Tabor's book *The War of the Flea* (Tabor 1969) to note another key distinction between the two: For the guerrilla, the local population is the key to the entire struggle. Karsner quotes Talbot as saying that in guerrilla warfare "it is the population that is doing the struggling. ... A supportive civilian populace is a guerrilla's camouflage, quartermaster, recruiter, communications network, and all-seeing intelligence service." The survival of a guerrilla movement is entirely dependent upon the support of the populace, who provide combat and support troops, food, shelter, intelligence, and medical support.

and prices.[2] Meanwhile, the precipitous fall in world coffee prices was further fueled by Vietnam's emergence as a major exporter. Particularly as a result of the dismantling of the ICO agreements, coffee prices in international markets plummeted from an average of US$1.32 a pound in 1986 to US$0.53 a pound in 1992 (Lustig 1998).

Second, Mexico simultaneously embarked on an ambitious structural reform of agricultural markets that reduced state intervention in commodity production and marketing. Part of this reform involved the dismantling in 1990 of the Mexican Coffee Institute (Instituto Mexicano del Café, or INMECAFE), the parastatal organization that subsidized coffee production and marketing.

The combination of these two events caused what has been called "the coffee crisis," owing to the dramatic effects that the ensuing drop in prices and disarray in domestic coffee markets had on Mexico's coffee sector. By 1993, coffee represented only 0.6 percent of the country's total export earnings and 15 percent of agricultural exports. Between 1990 and 2004, coffee production in Mexico fell by 21 percent, and exports, by 56 percent. During the same period, coffee export revenues fell 80 percent, from US$450 million in 1990–1991 to US$250 million in 2004 (SourceMex 2004). The drastic drop in domestic production and in exportable coffee reflected the deeper crisis faced by coffee producers in rural Mexico.

The Rise and Fall of INMECAFE and the Coffee Crisis

Created in 1958, INMECAFE had become the most important buyer and seller of coffee in Mexico, and for most producers, the only source of credit, fertilizers, coffee plants, and technical assistance. At its peak, INMECAFE serviced more than 85 percent of mainly small producers and bought 45 percent of the country's coffee harvest through a network of cooperatives called Unidades Económicas de Producción y Comercialización (UEPCs). Through the UEPCs, the parastatal channeled subsidized credit and inputs and received payment in coffee (Renard 1997). INMECAFE's support at the production level and its provision of a guaranteed market promoted strong entry of small landholders into the coffee sector. Not surprisingly, INMECAFE's presence induced the expansion of coffee plantations into lowland areas that were inadequate for the production of high-quality coffee. Indeed, although INMECAFE reduced its support levels starting in 1982 owing to an economywide crisis, the number of UEPCs and members continued to grow (Pérez-Grovas et al. 2001).

INMECAFE was dissolved in 1989–1990, with the aim of removing market inefficiencies created by the parastatal and of eliminating the agency's rampant corruption (Serrano 1998).[3] For the next three years, public sector intervention in the Mexican coffee sector was limited to transferring INMECAFE's infrastructure to the surviving UEPCs. The system of guaranteed prices disappeared with the agency, coffee export permits were eliminated, and customs requirements were simplified, effectively "freeing" the domestic coffee market.

This sudden collapse of the state-controlled production–processing–marketing pyramid exposed small producers to the vagaries and easy exploitation common in other commodity markets.[4] Under INMECAFE, producers did not participate in marketing or processing and were completely dependent on the expertise of INMECAFE (Milford 2004). Without transport, processing facilities, financing, or knowledge of markets, the average Mexican coffee producer did well to sell his coffee harvest to the middleman (*coyote*, in local parlance) who had a vehicle and could pay cash. The negotiations tended to be one-sided. Producers had no information on world coffee prices, to which domestic prices are indexed.[5] Even the scales were often "loaded," according to many producers' first-hand accounts (Pérez-Grovas et al. 2001). Furthermore, although many international coffee marketing and processing companies initially established offices in coffee-producing regions and attempted

[2] The ICO's cartel-like quota system to maintain world coffee prices above a certain level was inevitably followed by oversupply and a long-term decline of market equilibrium prices. This price decline, plus the difficulty of negotiating and ensuring compliance with the agreements, led to cheating and ultimately to the collapse of the system (Brandt 1991; Krivonos 2004).

[3] INMECAFE disappeared, along with the state-run Aseguradora Nacional Agrícola y Ganadera, which provided insurance to producers against crop losses.

[4] The continued overvaluation of the Mexican peso also contributed to a deterioration of the terms of trade for coffee producers (Gilly 1995).

[5] Domestic coffee prices, at which coffee exporters buy from middlemen and sell in domestic and export markets, closely follow daily coffee "Contract C" spot prices quoted by the New York Board of Trade.

to take the place of INMECAFE as buyers and credit providers, they soon disappeared. The few left behind charged oligopolic interest rates and fixed prices based on their oligopsonic position (Renard 1997).

Funes (1992) estimates that by June 1992, because of the disarray in global and domestic markets, farm prices for coffee in Mexico had fallen by more than 50 percent with respect to 1989, to levels often below average production costs, severely affecting the rural economy in coffee-growing areas (Figure 1). With such low prices, and without the credit to purchase inputs and carry out required plantation maintenance, productivity per hectare slumped by 50 percent from 1989 to 1993. Producers reacted to the crisis with cost-saving strategies: reducing maintenance activities drastically and harvesting their plots only partially. Both strategies reduced yields (and quality) in present and future crop cycles, exacerbating the income-reducing effects of the exogenous drop in the price of coffee. Indeed, many producers simply decided not to harvest. Of the 760,000 hectares planted in coffee, only 560,000 were harvested in 1993 (Pérez-Grovas et al. 2001). According to Gilly (1995), thousands of coffee producers abandoned their farms between 1989 and 1993.[6]

Among the hardest hit by the coffee crisis were producers in indigenous communities in the southeast and the south of Mexico. Lustig (1998) claims that "it is reasonable to attribute" the rise in poverty in these regions to the behavior of coffee prices in the early 1990s. Serrano (1998) and Harvey (1994) document the case of Chiapas. The effects of the sudden dismantling of a state support apparatus that been in place for five decades and that had created a dependent population was worsened by plummeting international coffee prices and by a 1988 law that severely restricted forestry in the state. According to these authors, these events provoked a drop in household incomes of 65 percent by 1993, deprived producers of traditional coffee-marketing channels, and severely restricted the supply of credit. The number of producers eligible to receive credit went from 20.4 percent in 1985–1989 to 12.7 percent in 1990, and credit reached only 5.7 percent of producers, usually the large ones. Furthermore, in her article on the Chiapas uprising, Darlington (1995) suggests that seasonal workers were the hardest hit by the drop in the demand for labor caused by the coffee crisis.[7]

The situation in Oaxaca was no different. Cano (1996) reports that between 1989 and 1994 coffee prices dropped by 60 percent in that state, affecting at least 55,000 coffee-producing households with 180,000 hectares of coffee.

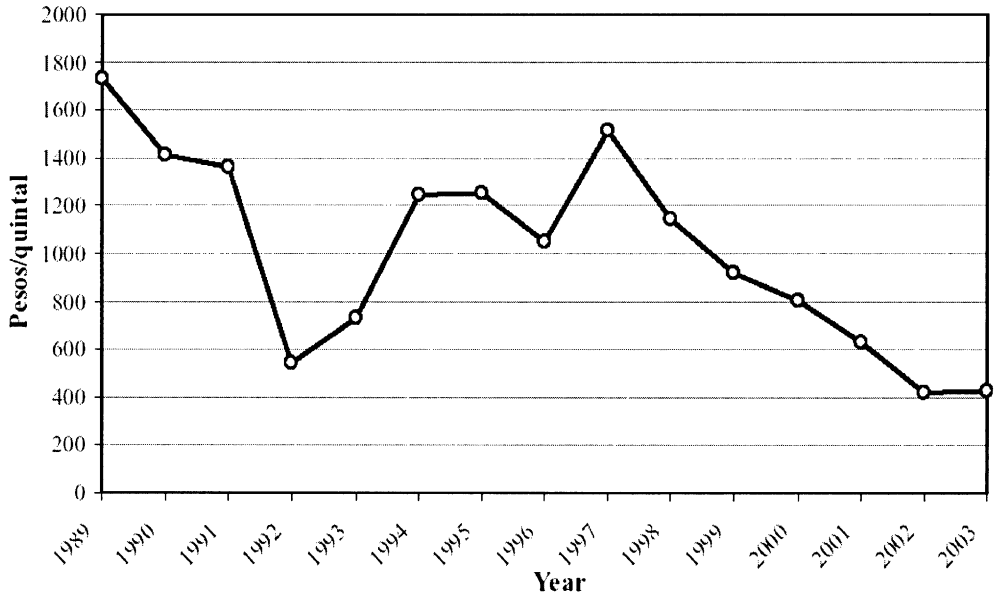
Coffee and Stability

Guadarrama (1992) quotes the following statement by President César Gaviria of Colombia during a meeting about drug traffic in Dallas, Texas: "The underlying issue regarding world coffee quotas is the consideration, on the part of the United States, of the potential impact of their removal on the political stability of Central America and the level of drug production and drug traffic in Colombia, both issues of national security." Indeed, according to Renard (1997), stability was the key motive behind the establishment of the quota system as the basis for International Coffee Agreements. The idea of maintaining world coffee prices above a certain level by limiting globally traded supplies originated during the Cold War years that followed

[6] The effects of the coffee crisis and the downward spiral that it created for coffee producers has been documented by Batz et al. (2005) for Oaxaca and by Flores et al. (2002) for Mexico. Statistics presented for Mexico by Flores et al. show that the crisis hit production mainly through a reduction in yields (which dropped at an average annual rate of 9.8 percent from 1990 to 1995, while the area even increased slightly. A key finding from numerical simulation modeling by Batz et al. was that a coffee grower's decision to abandon his or her farm is typically the last stage of a long downturn touched off by a decline in coffee prices. When prices fall, many growers migrate to cities after harvest season to supplement their incomes. In doing so, they forgo important farm maintenance, such as pruning coffee plants after harvest. As a result, the yields from coffee plants decline significantly in the next season. Lower yields imply growers will again need to find off-farm work and will again forgo maintenance. In this way, bad prices in one year can set in motion a downward spiral of falling incomes and yields. Eventually, coffee yields drop so low that growers are forced to clear trees to grow subsistence crops and, ultimately, to abandon their plantations.

[7] Indeed, an important part of the crisis may also have had to do with an internal labor market collapse, as large coffee *fincas* responded by decreasing the demand for farm labor, eliminating an important source of off-farm income for the rural population.

Figure 1: Historical Coffee Prices for Oaxaca, Mexico, 1989–2003



Source: Batz et al. 2005
Note: Prices are given in constant 2000 Mexican pesos per quintal (100 pounds) of parchment coffee. Parchment coffee results from de-pulping coffee cherries. The parchment-like skin needs to be removed to produce the green coffee sold in international markets.

World War II, as part of the U.S. "Alliance for Progress" strategy in Latin America. In this strategic plan, high and stable coffee prices would provide incomes and stability to producers in Latin America, preventing the rise of communist movements akin to the Cuban Revolution.

The Ejército Popular Revolucionario (EPR)

Depending on the source, reports Cano (1996), between 40 and 100 *guerrilleros* participated in the attack on police headquarters at La Crucesita, a town next to the Bahías de Huatulco tourist resort in the state of Oaxaca, in September 1996. The police station in the town of Tlaxiaco, in the Oaxaca's Mixteca region, just bordering the southern coffee-producing mountain ridge known as the Sierra Sur, had been attacked two hours earlier, along with police offices in the city of Oaxaca, the state's capital. In Cano's words, "local authorities fear that entire communities in the coffee-producing Sierra Sur of Oaxaca, where 9 out of 10 people are poor or very poor, are backing the EPR." He reports that after the attack on La Crucesita, the guerrillas fled to a coffee region known as Loxichas, where some of the detained confessed they were from.

The Ejército Zapatista de Liberación Nacional (EZLN)

Because the EZLN movement happened first, was much larger, had a successful global media strategy, and had a significant impact on Mexico socially, politically, and economically, it has captured much more attention and been more widely studied than the EPR. Many of those who have tried to understand the origins of *zapatismo* mention the coffee crisis as a trigger (Altamirano-Fajardo 2003; Collier 1994; Mestries-Benquet 2001; Darlington 1995; Gilly 1995; Pérez-Grovas et al. 2001). Mestries-Benquet's description is particularly interesting. According to him, the coffee crisis provoked the dissolution of incipient producer organizations and "an exodus toward the Zapatista movement" (Mestries-Benquet 2001, 121). Furthermore, he says, coffee producers identified with the Zapatista cause, which associated the coffee crisis with the free market policies that closed INMECAFE. The North American Free Trade Agreement (NAFTA) that Mexico had just negotiated with Canada and the United States was seen as the culmination of those policies, and this is why the Zapatistas chose to come out publicly on January 1, 1994, the day NAFTA came into effect.

Policy Issues

Two policy questions seem especially relevant for the case at hand and are addressed separately here:

1. Why did Mexican government officials not implement effective policies to prevent the coffee crisis, or at least diminish its impact on poor coffee producers?

Although policy makers in Mexico were justified in questioning INMECAFE's existence, closing it down was not the only, or necessarily the best, alternative. Krivonos (2004) mentions that coffee growers in developing countries have historically received a very small share of the export price of coffee and that a key culprit has been government intervention in the sector. Her research shows that government regulation of domestic markets, in the form of fixed producer prices and monopsony power of marketing boards, has created a significant wedge between producer prices and the world price of coffee, imposing an implicit tax on producers. Export taxes to raise government revenue have burdened producers, who have also been swayed by "low" but stable guaranteed prices. Additionally, Brandt (1991) reports that the coffee and exchange rate policies of almost all producing countries have reduced real producer prices by more than 50 percent below world market parity level (world market price at an undistorted exchange rate, minus marine freight and domestic transformation costs). INMECAFE also crowded out private market agents and promoted resource use distortions by encouraging expansion of production into marginal lands with no real comparative advantage for the crop. The agency's systemic corruption was the icing on the cake, so to speak, harnessing the necessary political support for its closure.

On the other hand, it would be naïve to think that policy makers in Mexico did not know about the prevailing discontent in the country's coffee-growing areas and the potential destabilizing effects of a sudden elimination of government support in the context of plummeting world prices and continually eroding terms of trade from an overvalued peso. However genuine their motives, Mexican policy makers seem to have seriously miscalculated the consequences of closing INMECAFE, and this is probably why they did close it, so precipitously, just at the moment when coffee producers most needed support.

Many sectors find government support addictive,[8] and Mexican coffee producers were no exception. Perhaps Mexican government officials failed to recognize the magnitude of the dependence that INMECAFE had provoked in producers, especially the smallest and most vulnerable. Why did they not choose to restructure INMECAFE, to make it a more transparent and accountable agency, while using its valuable network of UEPCs to funnel additional support to producers? Could not INMECAFE have been gradually converted into today's Mexican Coffee Council (CMC) (more on this to follow), and its support programs gradually redesigned to be less distorting? Did Mexican officials succumb to pressures from international financial institutions? Or were they blinded by the mirage of benefits that NAFTA was supposed to bring?

The Mexican government's attempt to ease the crisis had serious flaws and came too late. From 1989 to 1992, to help the poorest coffee producers adjust to the closure of INMECAFE, President Carlos Salinas de Gortari established a program to support coffee producers, embedded in the nationwide pro-poor social development program called PRONASOL and implemented by Mexico's Institute for Indigenous Peoples (INI). The program gave fresh credit for crop maintenance and harvest to producers with up to 10 hectares of coffee who had paid earlier debts with the government (Ontiveros-Ruiz 1995). The program's design, however, had serious flaws; it covered only the fraction of producers that least needed help (that is, the ones who had been able to pay their debts). In addition, it failed to tackle the underlying problems of low farm prices and dysfunctional market channels. Furthermore, because coffee prices were often below production costs, even eligible producers may have decided not to participate. Were credit amounts enough? Did disbursements reach producers on time? Were producers' transaction costs for participation too high?

In 1993 the government created the CMC, a multisectoral policy advisory body in which government programs were to be discussed and reviewed.[9] It

[8] Does the continued failure by industrialized nations to dismantle their US$0.8 billion per day agricultural subsidies sound like another case of addiction? See Pinstrup-Andersen (2003) for more details.

[9] The CMC consists of representatives of federal agencies (Ministy of Agriculture, Ministry of Economy, Ministry of Social Development, and Ministry of the Treasury); coffee-producing state governments; producer

was not until 1994/1995, however, that the CMC replaced the previous program with one based on per-hectare payments. Under this program, called Programa Nacional de Apoyo a Productores de Café (PNAPC), registered producers with fewer than 10 hectares of coffee received the equivalent of US$200 per hectare (Pérez-Grovas et al. 2001). Evidently, though, the PNAPC was too little too late, at least for Chiapas. The EZLN uprising occurred right in the middle of the 1994/1995 harvest season. Its root causes were too deep and its momentum too strong to be halted by such a program. Since the program was, by design, decoupled from production and required no proof of harvest, such payments were most likely used for household consumption or debt payment, which may have eased discontent. Indeed, it is not farfetched to imagine that some producers used some of the program's payments to finance the guerrillas.

2. Moral or ethical concerns apart, would Mexican taxpayers have been willing to see their tax money used to support coffee-producing regions in Mexico, if they had known the socioeconomic situation in coffee-producing regions, known that these uprisings would occur, and foreseen the magnitude of the political, social, and economic costs that they would impose?

The following paragraphs give a rough sketch of the social, economic and political costs of the uprisings.

In the case of the EZLN, fighting between the rebels and the army lasted only a few days. It ended when then-President Carlos Salinas de Gortari implemented a unilateral cease-fire. But while the two sides attempted to negotiate an end to the standoff, land invasions and often violent retaliations continued for more than a year in Chiapas (Darlington 1995). Since then, the army has moved deeper into rebel territory, sending rural inhabitants fleeing into the jungle and escalating tension throughout the region that continues up to today.

Bose et al. (2001) document the migration effects of the coffee crisis and the instability of the ensuing uprisings. They cite an estimate by Javier Ojeda, president of Mexico's National Coffee Producers' Union, that 30,000 mostly indigenous producers had left the country by 2001 seeking work as seasonal laborers. He also refers to a report in a "recent" Mexican newspaper estimating that 500 families a week were leaving the state of Chiapas in search of a livelihood in other states or in the United States.

The impacts of the uprisings were also felt at the macroeconomic level. In a 2004 study of the causes of capital flight in Mexico, Díaz-Bautista and Olivas-Andrade (2004) found a clear positive correlation with the political events in the first three months of 1994. They mention the EZLN and the assassination of Luis Donaldo Colosio in March of the same year, in the midst of his campaign for the presidency. Indeed, many Mexicans link the two events: the Zapatista uprising increased Colosio's confrontational attitude against Salinas de Gortari, the outgoing president, in what had already become a distant relationship. A widely held conspiracy theory maintains that Salinas de Gortari was the mastermind of Colosio's assassination. What is certain is that the capital flight provoked by the combination of both events was instrumental in the ensuing series of major peso devaluations, which provoked one of the worst financial crises in Mexico's history.[10] By 1995 interest rates had risen to between 60 and 90 percent, causing the closure of thousands of firms in the country. The money funneled to rescue Mexico's banks has cost the country dearly up to this day: the total private debt acquired by the government to save the banks from bankruptcy—taxpayers' money that is being paid to the banks—is roughly equivalent to 16 percent of GDP (IFAI 2003).

Finally, there is no doubt about the political costs of the series of concatenated events that the Zapatista and EPR uprisings helped bring about: the PRI, which had maintained the Mexican presidency without interruption for 70 years, lost the elections in 2000 and 2006.

organizations; and industry, represented by the Mexican Association of Coffee Exporters (Perez-Grovas et al. 2001).

[10] For a vivid description of the political and economic events that led to Mexico's 1994/1995 financial crisis, see Oppenheimer (1996).

Stakeholders

Stakeholders Directly Involved in the Mexican Coffee-Producing Sector

The CMC and the state-level coffee councils constitute the institutional settings in which the different stakeholders directly involved in the coffee sector discuss and negotiate coffee policies and programs. Small producers not affiliated with any organization are left out.

The major stakeholders directly involved in the coffee sector are coffee producers, industry, and the private sector.

Coffee producers. Coffee producers consist of small-scale coffee producers not affiliated with an organization, small-scale coffee producers affiliated with an organization, and large-scale coffee producers, most of whom are affiliated with an organization.

Key producer umbrella organizations are represented in both the CMC and state-level coffee councils. The most important producer organizations are the Confederación Nacional Campesina, Coordinadora Nacional de Organizaciones Cafetaleras, Central Independiente de Obreros Agrícolas y Campesinos, Confederación Nacional de Propietarios Rurales, and Confederación Mexicana de Productores de Café.

Industry. The domestic market for coffee is highly concentrated. Nestlé is the largest private buyer and toaster of Mexican coffee, and it sells 84 percent of the instant coffee consumed in Mexico. Other important transnationals operating in México are Far-Man, J. Aron, Omnicafé, Becafisa, TIASA, and Rotphos. Together, they account for 67 percent of the coffee exported from Mexico.

Industry is represented at the CMC through the Mexican Association of Coffee Exporters, an umbrella organization.

The public sector. Public sector stakeholders include federal government agencies (Agriculture, Economy, Social Development, and Treasury), which have a seat at the CMC. According to Pérez-Grovas et al. (2001), the federal government agencies have "effective hegemony" over the CMC. State-level government agencies (usually Agriculture) also have a seat at the CMC and in the corresponding state-level coffee councils.

Stakeholders Not Directly Involved in the Mexican Coffee-Producing Sector

Other stakeholders are Mexican coffee consumers, international coffee consumers (industry and final consumers), the Mexican population in general (which bears the costs of instability), and taxpayers in particular, who knowingly or not, pay to maintain the social, economic, and environmental attributes associated with coffee production.

Policy Options

Poverty and social exclusion cannot be solved by isolated sector policies. A series of actions need to be taken, both nationally and internationally, to combat these two evils. Pinstrup-Andersen (2003) summarizes them as follows:

- institutional innovation in the international arena to help assure accountability, participation, and empowerment of the poor and deal effectively with the international spillovers of national actions in such areas as trade, environment, health, security, poverty, and hunger;
- investments in rural infrastructure (such as hospitals, clinics, schools, electricity, roads, clean water, drainage);
- investments to improve governance capacity at the domestic and local levels, including institutional developments to make private markets work in rural areas (such as common standards and measures, the enforcement of contracts, clear property rights);
- social safety nets to help people out of hunger and poverty in the short run; and
- the expansion of international development assistance, primarily to assist the poor.

Mexican policy makers, and Mexicans as a whole, seem to have learned the lessons of the 1990s. Poverty and frustrated expectations from an economic modernization with no or negative payoffs for many inhabitants can trigger a backlash, undoing several years of sound macroeconomic policies and market-oriented reforms (Lustig 1998). Evidence of this is the Mexican government's

significant efforts to combat poverty in the past decade, especially in rural areas. By 2004 public spending in social development in Mexico represented 45 percent of total public spending, and it has grown at an average 5.9 percent annually since the mid-1990s, compared with 3.1 percent real annual growth in total public spending in the same period (Flores-Alonso and Barrera Chavira 2004).

Two programs are worth mentioning because of their significant impact on poverty alleviation. The first is PROCAMPO. Since 1993 roughly 4 million farmers have received annual direct per hectare payments through the program, at a total cost of US$1.3 billion in 2003 (Ávalos-Sartorio 2006). The second is Oportunidades (which literally means "opportunities" and was formerly called PROGRESA, "progress"). Since 1997 the program has funneled financial resources to women in poor households to finance their children's schooling and the family's health and basic foodstuff needs. The program aims to develop the human capital in poor households and to break the vicious cycle of malnutrition, morbidity, high infant mortality rates, high fertility, high school dropout rates, and unhealthy living conditions, which keep people trapped in poverty. In 2005 Oportunidades reached nearly 5 million households (roughly 20 percent of all households in Mexico), 80 percent of which are located in rural areas, at an annual budgetary cost of US $3.5 billion in 2005, nearly 1 percent of Mexico's GDP (IFPRI 2002; SEDESOL 2006). It is no coincidence that the program has reached 60 percent and 70 percent of the rural population in Oaxaca and Chiapas, respectively. (Indeed, the program has been so successful that it is serving as a model across Latin America.)

Coffee Sector Policies

In spite of such nationwide efforts, coffee producers are still mostly poor and continue to face considerable obstacles adjusting to the coffee crisis.[11] Technical assistance in the communities is inadequate, formal credit is still scarce, and informal credit is prohibitively expensive. Many producers express skepticism about the utility of farm organizations, associating producer groups with fraud and political manipulation. Lacking a formal organizational structure with which to access price information and select best buyers, many still hope that conditions will improve or that the public sector will intervene to provide solutions to their situation.

Today, the Mexican government operates a series of programs targeting the coffee sector. Among these, the flagship coffee program is the Price Stabilization Fund (FEC), a US$80 million permanent fund that provides a guaranteed price to producers when international prices drop below a pre-established floor of US$85 per hundredweight (cwt)[12] of green coffee (CMC 2004). Operated by the Mexican Ministry of Agriculture, the FEC provides a maximum subsidy of US$20 per cwt of coffee for up to 20 cwt per participating producer. In order to participate, coffee producers must be registered in the National Coffee Census (*Padrón Nacional Cafetalero*), must sell their coffee to registered buyers, and must pick up their subsidy checks in person at the designated local government office. FEC rules establish a mechanism for maintaining the fund. Participating producers commit to accepting a discounted price when the international price of coffee surpasses US$85. The amount of the discount is used to replenish to the fund.[13]

Unfortunately, the FEC has weaknesses: research by Ávalos-Sartorio and Blackman (2005) on the impact of the FEC in the southern Sierra and coastal regions of Oaxaca shows that the guaranteed price provided by the program is not nearly high enough to cover production and marketing costs for many producers. Their results also show that in the 2002/2003 crop season, the program's second year of operation, support reached less than a third of producers in that region. Certain types of producers consistently chose not to participate, presumably because they faced high transaction costs (including transporting coffee to the town where a registered buyer is located, which is usually farther away than the unregistered middleman, and commuting to the city, often far from the farm, to receive and cash the government check in a bank). Producers in this group included those located more than 20 kilometers from the nearest paved road (about one-third of the producers in our

[11] This section borrows heavily from Ávalos-Sartorio et al. (2006).

[12] The standard measure of coffee, a cwt is equivalent to 46 kilograms.

[13] The discount varies from US$3 per cwt when the international price is between US$85 and US$89.50 per cwt to US$20 when the international price is US$140 or more. To be continuously eligible to participate, producers must demonstrate that they have participated in the FEC's replenishment in years when international prices have exceeded the price ceiling.

study area), those in towns with an indigenous population greater than 20 percent (about one-third of the towns in the region), and those in towns were women producers represent the majority owing to significant male outmigration (60 percent of towns in the region). Logically, these findings suggest that to increase participation, those responsible for the FEC's design and implementation must take actions to reduce transaction costs of participation, especially for producers located far from paved roads, indigenous people, and women.

The direct per hectare payments program implemented in 1994/1995 by the CMC is now called the Productivity Support Fund (PAP) and has the formal objective of promoting productivity improvements through fertilization and pruning. The PAP has probably not had this effect in practice, however, because it has no farm-level mechanism for verifying output, so program payments are made regardless of whether the producer harvests or not (Ávalos-Sartorio et al. 2005). One means of mitigating this deficiency would be to redirect financial resources now used for the PAP to the FEC. The additional resources could be used to create incentives for producers to enter the specialty coffee market by subsidizing certification costs. Alternatively, or in addition, producers could get an additional price premium for producing sustainable or high-quality coffee, or both, subject to some verifiable monitoring mechanism.

In recent years, consumer demand in the developed world has given rise to a number of innovative strategies to revive the coffee industry. Among them, certification schemes for organic, shade-grown, and fair trade coffee are the most popular. Although Mexico is the world's biggest producer of certified organic coffee, so far few producers have been able to participate in organic and other certification-based specialty coffee markets. Furthermore, even such progressive producers face a feeble situation. In their evaluation of the impact of fair trade and organic certification in Oaxaca, Calo and Wise (2005) conclude that, given the current price and cost structure of coffee production, certification by itself is not sufficient to make coffee profitable for most producers. They write that "only hard-won government support programs, in the end, brought producers to a more reasonable rate of return from their coffee production" (Calo and Wise 2005, 2). They refer primarily to the FEC and the FAP.

Assignment

The assignment is to identify key lessons learned for the design and implementation of government action in situations similar to the one described in this case.

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Chapter Eight
Development Strategies, Macroeconomic Policies, and the Agricultural Sector in Zambia (9-8)

by Danielle Resnick and James Thurlow

Executive Summary

At its independence in 1964, Zambia, a landlocked country in Southern Africa, was perceived to have a bright future. The country was endowed with vast natural resources, including favorable agroecological conditions and large copper deposits. Within two decades, however, the country descended into a macroeconomic crisis. Agriculture and rural incomes stagnated and industry was collapsing, leading to severe poverty and malnutrition. This case study examines how Zambia's different development strategies led first to a macroeconomic crisis in the 1980s and then to economic recovery in the late 1990s. More specifically, it focuses on the interplay between macroeconomic and sectoral policies and draws attention to how policies and stakeholder interests at different levels of an economy must work synergistically if a development strategy is to be sustainable and achieve its objectives.

Zambia's government first adopted a strategy of state-directed industrialization. Bolstered by copper revenues and the political influence of urban dwellers, this strategy favored urban industry over agriculture and rural development. When world copper prices collapsed, however, the country plunged into macroeconomic crisis and the sectoral policies underlying state-directed industrialization became unsustainable. Driven by pressures from domestic political constituents and international donors, Zambia became a multiparty democracy in 1991 and elected a government that favored a strategy of market-driven development. The country eventually achieved macroeconomic stability by curtailing sectoral investments and subsidies, but with mixed consequences for national welfare and agricultural producers.

Zambia has recently experienced a period of renewed growth and poverty reduction. Yet just as falling copper prices forced Zambia to undergo market-oriented reforms, the recent boom in world copper prices could provide incentives to return to a more interventionist development strategy. To implement such a strategy, however, the government would have to raise taxes on foreign mining companies, which now own Zambia's previously state-owned mines. This case study focuses on trade-offs from raising mining taxes and possible implications for agriculture and the food system.

Given the current political environment and taking into account the mechanisms through which a change in world copper prices affects the agricultural sector, your assignment is to advise Zambia's government on how it might use the revenues gained from increasing mining taxes to improve economic growth and reduce poverty.

Background

In 1981 Zambia, a landlocked country in Southern Africa, was reclassified by the World Bank from middle- to low-income status. The country had accumulated US$1.8 billion in external debt, and per capita incomes had collapsed from US$527 in the late 1960s to US$395 in the early 1980s (World Bank 2007). By the early 1990s the country's long descent into macroeconomic crisis compelled a change in government and widespread economic reforms. Nonetheless, contemporary Zambia remains a low-income country with per capita income of around US$300 and with 68 percent of the population living below the poverty line. As in many parts of Africa, poverty and malnutrition are particularly severe in rural areas, where 60 percent of the population resides, virtually all of whom depend on agriculture for their livelihoods.

Yet based on its natural resources, Zambia had the potential to achieve a very different outcome. The country is blessed with a variety of agroecological conditions providing opportunities to pursue a diverse array of agricultural activities. Maize is the dominant food crop in the country, although sorghum and millet are important in the drier

southern provinces and cassava dominates in the north. Together, food crops and livestock make up most of the agricultural sector, although export crops, such as cotton and tobacco, are increasingly important. Owing to low population densities and poor road infrastructure, most smallholder farmers live in remote areas many miles from markets. Even farmers with better access to input markets tend to have low crop yields, partly owing to inadequate research and extension services. Irrigation is rare, and Zambia's rainfed agriculture suffers from repeated droughts, which result in chronic food insecurity.

Zambia's underinvestment in agriculture continues, and today less than 5 percent of public resources are spent on the sector each year. As one of the world's largest exporters of copper, however, Zambia at one point possessed the resources to make long-term investments in the agricultural sector and the food system more broadly. How did a country with such agricultural potential find itself with a failing agricultural sector and a periodic dependence on food imports? Why did a country with considerable copper revenues become overwhelmed by macroeconomic instability and burgeoning foreign debt? The answers to these questions lie in the development strategies adopted by Zambia at different times in its history and specifically in the interplay between macroeconomic and sectoral policies.

Policy Issues and Challenges

What Is a Development Strategy?

Development strategies are the bundle of policies adopted by governments to achieve prioritized objectives, such as economic growth or poverty reduction. A strategy reflects a particular concept of the development process and is thus influenced by prevailing policy and theoretical beliefs. For example, "state-directed industrialization" and "market-driven development" are strategies motivated by different development models. As seen in Figure 1, a country's strategy and how it is implemented also depend on exogenous factors, such as natural resource endowments and the political interests and power relations of different stakeholders. The capacity of the state to design and implement policies also influences its choice of strategy.

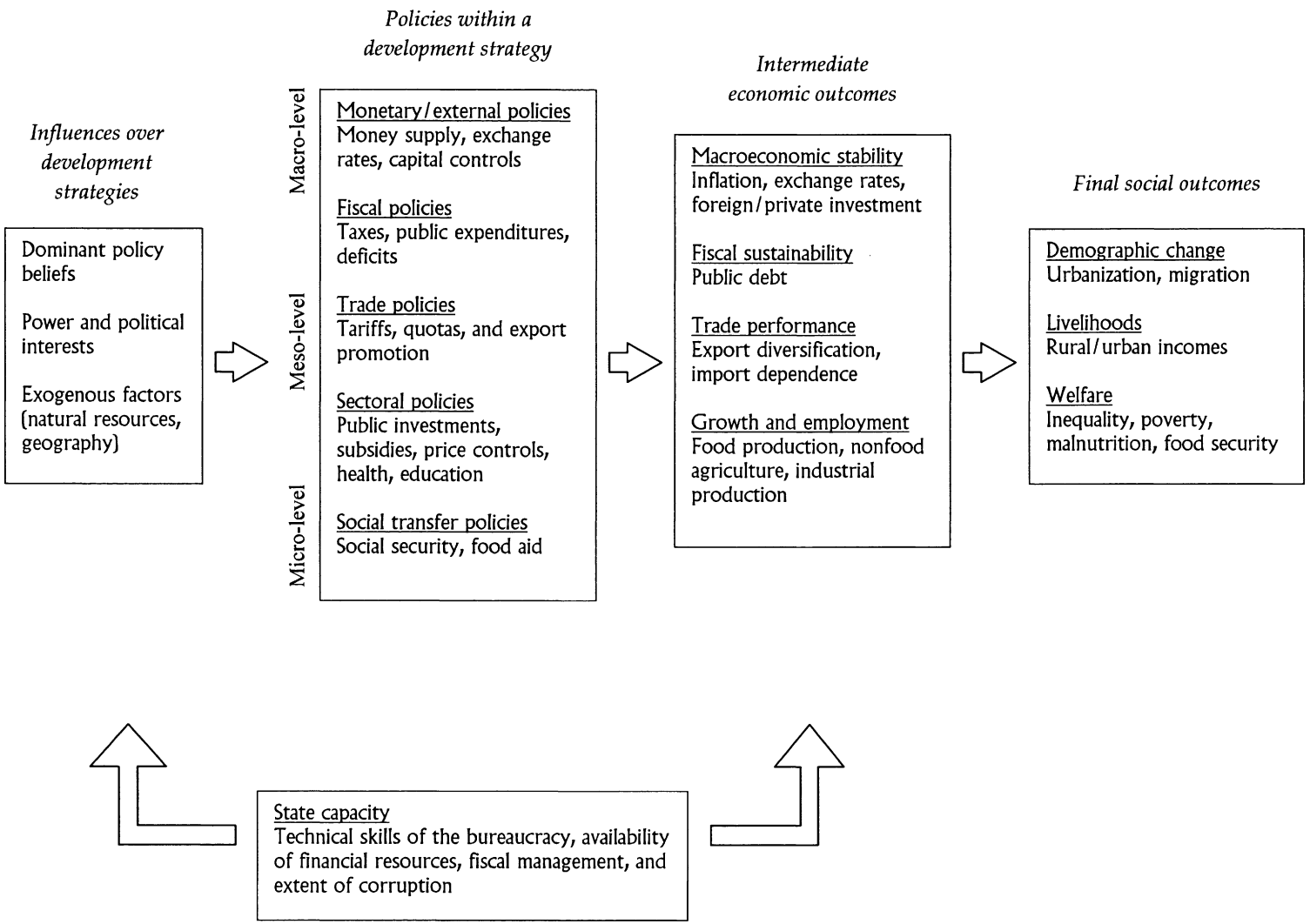
The policies constituting a development strategy operate at different levels of the economy. At the macro-level are monetary and tax policies, which, among other things, help manage a country's money supply and revenues and are the main levers for influencing the level of inflation and public deficits. At the meso-level are sectoral and trade policies, which rely on policy instruments like tariff protection, price subsidies, and public investments to encourage specific sectors, such as agriculture, industry, health, and education. More micro-level policies, like food aid, are often directly targeted at specific population groups, such as rural and urban households. There is a symbiotic relationship among all three levels. Indeed, macroeconomic policies play a pivotal role in a development strategy because they determine the viability of lower-level policies. At the same time, the financing of meso- and micro-level policies has implications for fiscal deficits and macroeconomic stability. As such, the policies at each level of the economy must work synergistically for a development strategy to be sustainable and its objectives realized.

Although the interaction of policies makes it difficult to attribute outcomes to specific policies, macroeconomic policies usually determine macroeconomic stability and fiscal sustainability, whereas sectoral policies determine trade performance, production, and employment. It is also important to distinguish between economic and social outcomes. Macroeconomic policies are often designed to achieve economic outcomes, such as controlling foreign exchange, whereas sectoral policies may target economic *and* social outcomes, such as improving rural incomes through agricultural growth. Above all, the capacity of the state to implement policies will determine all of these outcomes.

State-directed Industrialization and Macroeconomic Crisis, 1964–1990

Like many African countries during the 1960s and 1970s, Zambia pursued a development strategy driven by large-scale urban-based industrialization and a vast degree of state intervention in the economy. For Africa as a whole, the impetus for this strategy, termed "urban bias," was threefold. First, there was a genuine belief among African governments that state-directed industrialization was the most effective means of achieving modernization. Indeed, this was the prevailing development paradigm of that period, widely espoused by both development economists and international institutions (Helleiner 1986; Lofchie 1997). Second, in the quintessential political economy work on the subject, Bates

Figure 1: Strategies, Policies, and Outcomes



(1981) observed that well-organized consumers and trade unions located in African cities posed greater threats to African leaders and the prevailing one-party political systems than more dispersed and remote smallholder agricultural producers. As such, African governments invested more heavily in urban areas, often leading to the decline and neglect of the agricultural sector. Third, many African countries are endowed with considerable mining resources that provided the revenues for financing investments in state industries at the expense of agriculture. For instance, copper revenues constituted 53 percent of Zambia's government budget in the decade after the country achieved independence in 1964 (Bratton 1994).

Copper revenue, political concerns, and prevailing policy beliefs all contributed to the industrialization strategy pursued by the ruling United National Independence Party (UNIP). A major prong of this strategy was import-substitution-industrialization (ISI), which sheltered state-owned industries from international competition through protectionist trade policies. By limiting competition from foreign imports, ISI was expected to provide Zambia's "infant" industries with an opportunity to achieve global competitiveness. High tariff barriers were erected against foreign imports, and Zambian industries relied on cheap raw materials to produce manufactured goods intended for export. Anticipated advantages of this approach included improved manufacturing capacity and increased employment opportunities in urban areas. Indeed, ISI contributed to the tremendous growth of state-owned industries, which accounted for three-quarters of the Zambian economy by 1990 (McCulloch et al. 2000). The concentration of investment in roads and railroads in the middle of the country, where most of the copper mines and manufacturing industry were located, further bolstered the objectives of ISI.

Nevertheless, such trade and investment policies were detrimental to agriculture. In particular, ISI led to a disadvantageous shift in the terms-of-trade against agriculture, in which Zambia possessed a comparative advantage. Moreover, urban-biased public investment deprived rural regions of the infrastructure needed to transport agricultural goods to domestic and foreign markets. In fact, the share of the public budget allocated to agriculture declined from 7 percent in 1966–1970 to 3 percent in 1975–1980 (Bratton 1994).

At the same time, the rapid expansion of the copper sector led to changes in the exchange rate that also hurt agriculture. The large revenues received by Zambia thanks to high copper prices raised the value of the country's currency, the kwacha. Although this overvaluation made foreign imports cheaper, it also undermined the export competitiveness of Zambia's non-mining sectors, especially agriculture. This phenomenon is generally referred to as "Dutch disease" and usually occurs when the exploitation of a natural resource leads to the overvaluation of a nation's currency and results in adverse terms of trade.
Other aspects of the government's industrialization strategy involved more direct interventions in the agricultural sector. Because agriculture was viewed as a food security sector rather than a growth sector, the government offered smallholders subsidized inputs for maize production, the country's main food staple. As a result, maize was grown throughout the country, even in agroecological regions where it was poorly suited, and this approach thus stifled agricultural diversity. Furthermore, the compensation that smallholder farmers received for their output was rarely commensurate with domestic market prices. Farmers were implicitly taxed through panterritorial prices administered by the National Agricultural Marketing Board (NamBoard), which bought producers' maize output at a constant price despite local disparities in supply and demand. These policies enabled the government to keep food prices low, thereby subsidizing the consumption of urban residents (Bratton 1994; Pletcher 2000).

The policies that made up Zambia's industrialization strategy proved disastrous for agriculture and food production. Smallholders' purchasing power declined, and they faced an incentive to either reduce output or smuggle it to neighboring countries where they could receive higher prices. Jansen (1991) estimated that agricultural output was approximately 30 percent lower on average per year as the result of such policies. Consequently, the country could meet only 79 percent of its food needs by 1980 (Bratton 1994), and there was large-scale migration out of rural areas, with the share of the rural population falling from 74 to 60 percent during 1965–1980 (see Table 1).

Table 1: Zambia's Economic and Social Outcomes, 1965–2005

Indicator	1965–69	1970–74	1975–79	1980–84	1985–89	1990–94	1995–99	2000–05
GDP per capita (US$)	526.6	505.9	453.6	395.3	349.5	306.4	266.9	292.0
Share of GDP (%)								
Agriculture	13.5	12.8	16.5	16.1	15.8	22.3	20.0	21.5
Manufacturing	9.0	13.4	18.8	21.0	29.3	29.8	12.6	11.6
Mining and construction	52.6	42.7	25.5	21.7	19.0	16.8	19.2	14.4
Exports	52.3	47.9	39.6	33.1	35.6	35.3	29.3	21.4
Investment	—	29.7	26.0	16.1	8.8	11.6	13.5	21.9
Agriculture share of exports (%)	2.5	1.2	1.2	—	—	4.9	10.3	16.4
Rural population share (%)	73.8	67.8	63.1	60.2	60.4	61.5	63.8	65.1
External debt per capita (US$)	—	159.0	280.9	365.4	509.6	527.9	517.6	475.3
Copper price (US$1,000 per ton)	5.8	4.2	2.9	2.5	2.4	2.6	1.9	2.6
Exchange rate (US$ per kwacha)	0.7	0.7	0.7	1.1	8.5	277.9	1,527.3	4,182.7
Money supply growth rate (%)	—	10.1	14.4	15.8	59.5	68.1	33.8	28.3
Annual inflation rate (%)	14.7	3.1	8.8	12.4	60.1	114.7	25.6	22.2
						1991	1998	2004
National poverty headcount (%)						70.0	72.9	68.0
Rural households						88.0	83.1	78.0
Urban households						49.0	56.0	53.0

Source: World Bank 2007; FAO 2007.

Note: Dashes indicate "not available."

When world copper prices collapsed in the mid-1970s, the whole edifice upon which Zambia's industrialization strategy was built began to crumble. Without export revenues from copper, the government could not realistically afford to subsidize inefficient state enterprises or maintain subsidies on food and agricultural inputs. The government initially attempted to maintain its sectoral policies by adjusting its macroeconomic policies. For instance, the government devalued the kwacha in an attempt to curb import demand and reduce the country's widening trade deficit. To overcome what it believed to be a temporary terms-of-trade shock, the government borrowed heavily on international capital markets, and foreign debt mounted rapidly. By 1983 debt per capita exceeded gross domestic product (GDP) per capita, and by 1991 the country was more than US$4 billion in debt. The government's eventual decision to counter the growing budget deficit by printing more money only exacerbated the situation, and by 1990 the inflation rate had risen to more than 100 percent. Zambia's attempted industrialization strategy had failed, and the country entered a severe macroeconomic crisis.

The combination of high inflation, rapid devaluation, and burgeoning foreign debt hurt rural and urban populations alike. Devaluation meant that the currency declined in worth just as inflation was increasing the price of domestic goods, thus driving up the cost of living, especially for urban households whose consumption patterns are typically more import-intensive. At the same time, the labor market contracted and employers imposed wage freezes, so they were not adjusting their workers' incomes to meet the rising living costs. By the mid-1980s, these processes cumulatively resulted in a two-thirds decline in the purchasing power of urban consumers and caused around 80 percent of rural households to struggle to meet their basic consumption needs (Bratton 1994). Child mortality also increased dramatically, and the number of malnourished children ranged from one-third in the Eastern Province to two-thirds in the Northern Province (Bratton 1994). Moreover, a higher percentage of children under five years old were wasted or stunted than in 1970 (McCulloch et al. 2000), and the proportion of the total population considered undernourished had risen by 21 percent since the country had achieved independence (FAO 2007).

Because of the pronounced deterioration in key social indicators, the ballooning budget deficit, and rising external debt, Zambia negotiated a series of structural adjustment programs (SAPs) with the International Monetary Fund (IMF). SAPs usually require governments to adopt a package of interconnected reforms, such as macroeconomic stabilization, trade liberalization, and privatization. Stabilization involves both correcting exchange rate distortions and reducing public spending to curtail inflation and reduce budget deficits. Stabilization can also reverse adverse terms of trade by ensuring that the exchange rate is not overvalued. Likewise, a liberal trade policy reduces tariffs against foreign imports and halts government funding of non-competitive industries. Simultaneously, privatization requires that the government diminish its support of poorly performing state-owned enterprises and reduce the number of public sector employees.

The UNIP government's resistance to fully implementing these economic policies, however, highlights their politically contentious nature. The clearest example occurred in 1986 when the government attempted to rescind subsidies on maize meal, which is Zambia's main staple, in order to pursue fiscal austerity. At the time, the subsidy was more than 70 percent of the retail price of maize (Jansen 1991). Urban consumers, who resented facing higher prices for a food staple when their incomes were already being eroded by inflation, responded with riots (Grindle 1996). Afraid to alienate its urban constituents, the UNIP government under President Kenneth Kaunda backed away from the subsidy removals.

UNIP's halting reforms not only undermined the confidence of international donors but also emboldened the country's trade unions. Well-organized and aggrieved by the loss of their purchasing power, these unions, along with civil society and the private sector, formed a coalition and gave birth to a cohesive opposition party, known as the Movement for Multi-party Democracy (MMD) led by Frederick Chiluba. The MMD's political opportunity came in 1990, when mass civil unrest broke out after maize meal prices doubled. Urban rioters blamed the one-party system for the country's economic problems, and Kaunda was forced to allow for the legal recognition of other political parties. Disillusionment with UNIP was evident in the country's first multiparty elections the following year, as Chiluba and the MMD garnered more than 70 percent of the vote in almost all of the country's provinces, urban and rural alike (Bratton 1994).

Market-driven Development Strategy and Structural Adjustment, 1991 Onward

Despite having been a vocal critic of SAPs, Chiluba adopted a market-driven strategy after winning the 1991 elections (Larmer 2005). Given the dire economic circumstances in the country and the MMD's campaign promises to restore economic growth, such reforms were essential if the MMD was to acquire legitimacy and distinguish its economic policies from the previous UNIP government. In addition to internal pressures for change, the shift to economic liberalization also mirrored a broader shift in the dominant development policy paradigm to the "Washington Consensus," which now emphasized the primacy of free markets and condemned government intervention.

The elimination of consumer subsidies on maize meal in 1991 was one of the first important reforms under the new MMD government. To maintain macroeconomic stability and fiscal austerity, the government could no longer afford to subsidize urban consumers. Although the loss of maize meal subsidies provoked the same level of protest witnessed in 1986, the MMD government refused to capitulate (Simutanyi 1996), partly because a widening rift within the labor movement over economic policy reduced the unions' collective effort at organizing on behalf of their own interests. Moreover, given the origins of the MMD, the labor unions were effectively co-opted by the new ruling party, which thereby eliminated their autonomous influence over political decisionmaking (Pletcher 2000; Simutanyi 1996). The rescinding of the maize meal subsidies contributed to a substantial decline in the budget deficit from 7.4 to 2.2 percent of GDP within the MMD's first year in office (Rakner et al. 2001).

At the macro-level, the new government adopted a high real interest rate, and the Bank of Zambia implemented a cash budget system to prevent the government from printing money to cover expenses (Rakner et al. 2001). These efforts helped reduce inflation from over 100 percent in 1991 to around 22 percent by 1998 (see Table 1). To further reduce public spending, the MMD established the Zambia Privatization Agency in 1993 to dismantle unprofitable state-owned businesses (McCulloch et al. 2000). The manufacturing sector proved the main target of this privatization effort, although the copper mines were eventually privatized after 2000. Without government support, manufacturers could no longer improve competitiveness behind tariff protection. As such, the rationale for ISI gradually disappeared, and Zambia lowered its import tariff rates from 100 percent to 25 percent over the course of the 1990s (Rakner et al. 2001). The reversal of ISI provided a more conducive environment for agricultural exports, thereby helping correct terms-of-trade imbalances. Likewise, the correction of the overvalued exchange rate gradually reduced the price distortions against export agriculture, even though a more devalued currency made foreign imports more expensive for urban consumers (Thurlow and Wobst 2006).

Within the agricultural sector, NamBoard was dismantled as a result of the termination of consumer food subsidies. Moreover, the government ended its bias toward maize production by terminating panterritorial pricing and uneven input support for maize. Nevertheless, the government could not afford to invest scarce resources in the infrastructure necessary for farmers to transport their output and purchase inputs. In fact, as of 1998, only 18 percent of rural households lived within five kilometers of input markets (Thurlow and Wobst 2006).

By the end of the 1990s, the structural adjustment program had at least three major effects on social welfare outcomes. First, urban dwellers experienced a severe contraction in purchasing power and jobs. Privatization and the end of ISI required manufacturing companies to either close down or decrease production costs by reducing the size of the labor force. As such, between 1991 and 1998 more than 32,000 employees in the formal manufacturing sector lost their jobs (McCulloch et al. 2000). Moreover, the collapse in copper prices caused more than 25,000 workers in the mining sector to lose their jobs over the decade (McCulloch et al. 2000). The cumulative impact of the loss of jobs and consumer subsidies resulted in an approximately 6 percent increase in urban poverty between 1991 and 1998 (Table 1). This shift led to a dramatic reversal of earlier migration patterns, with Zambians now moving from urban to rural areas (Potts 2005).

Second, the agricultural sector experienced increased diversification and disparities. On the one hand, liberalization encouraged a number of foreign private companies to establish outgrower schemes for cotton and horticultural products. Outgrower schemes are a form of agribusiness that provides farmers with the necessary inputs and training for the production of high-quality goods in exchange

for a guaranteed portion of the farmer's agricultural output. Taking advantage of Zambia's more open trade environment, most of these goods were geared toward export markets. Farmers involved in these industries require close proximity to established transport infrastructure, and therefore production of these crops occurs mainly in the east of the country. The share of agriculture in exports rose from 5 percent in 1990 to 16 percent a decade later (Table 1).

On the other hand, there were mixed effects in the food crop sector. A number of farmers began producing crops better suited to their agroecological zones. For instance, the area of land devoted to maize fell by 23 percent between 1990 and 1997 (McCulloch et al. 2000), while cassava production expanded in the north of the country and producers in the south switched to sorghum and millet (Haggblade and Zulu 2003). Yet constraints on public spending ensured that more remote food crop producers rarely possessed adequate credit to purchase high-yielding seeds and fertilizer. Unlike high-value export crop production, food staples production failed to attract much private investment and support (Saasa 2003). As a result, rural areas experienced a slight decrease in poverty over the 1990s (see Table 1), but a majority of this reduction occurred among smallholders involved in cotton and horticulture. For instance, some of the largest poverty declines occurred in the Eastern Province where outgrower cotton schemes are concentrated.

Third, the expansion of agriculture and the slight reduction in rural poverty were accompanied by the stabilization of certain malnutrition indicators. Having risen rapidly since independence, the proportion of Zambians who were undernourished remained constant at 47 percent throughout the 1990s. Malnutrition did not decline during the structural adjustment period, but it did not worsen either.

Despite the hardships incurred during the structural adjustment of the 1990s, the MMD's more prudent macroeconomic policies now appear to have laid the foundations for renewed growth. Per capita GDP since 2000 has risen for the first time since independence, and poverty fell in both rural and urban areas between 1998 and 2004 (see Table 1). Agriculture's share of GDP has expanded, albeit as a result of a sluggish manufacturing sector, and export diversification has continued, with agriculture becoming an important source of export revenues and foreign exchange. Finally, the macroeconomic stability and development outcomes achieved since 1991 helped Zambia qualify for substantial debt relief under the World Bank/IMF Heavily Indebted Poor Countries Initiative (HIPC). Thus, the past five decades of development in Zambia demonstrate the need for consistency between macroeconomic and sectoral policies in a country's strategy and the importance of stakeholder interests in influencing policy choices.

Stakeholders

The interests and roles of key stakeholders changed dramatically between the period of UNIP rule and the ascendancy of the MMD after 1991. As seen in Table 2, in the pre-1991 period, smallholder farmers desired a market value for their agricultural production and improved rural infrastructure. Yet these preferences were difficult for the UNIP government to satisfy given the party's concern with maintaining the support of urban constituents, who were more interested in low food prices and greater employment opportunities in the cities. At the same time, UNIP faced pressure from the World Bank and IMF to embark on market-driven reforms under a structural adjustment program. Ultimately, UNIP's credibility with all of these other stakeholders collapsed, benefitting the MMD in the country's first multiparty elections.

In the post-1991 period, the MMD adopted many of the policy prescriptions for market reform advocated by international donors, and the country benefitted from debt relief under the HIPC. These reforms removed input subsidies for farmers and thereby increased the desire of this stakeholder group for seed and fertilizer credit. For urbanites and the Zambian Confederation of Trade Unions (ZCTU), which were previously the support base for the MMD, employment and inflation remained major concerns. Indeed, the decline in living standards of urban constituents during most of the 1990s under the MMD's market-driven policies has led to a rise in opposition parties, such as Michael Sata's Patriotic Front (PF), which increasingly appeal to the urban poor. Thus, after enjoying more than a decade of relatively unchallenged rule, the MMD is for the first time forced to deal with a credible opposition party.

Table 2: Stakeholder Interests in Zambia's Reform Process

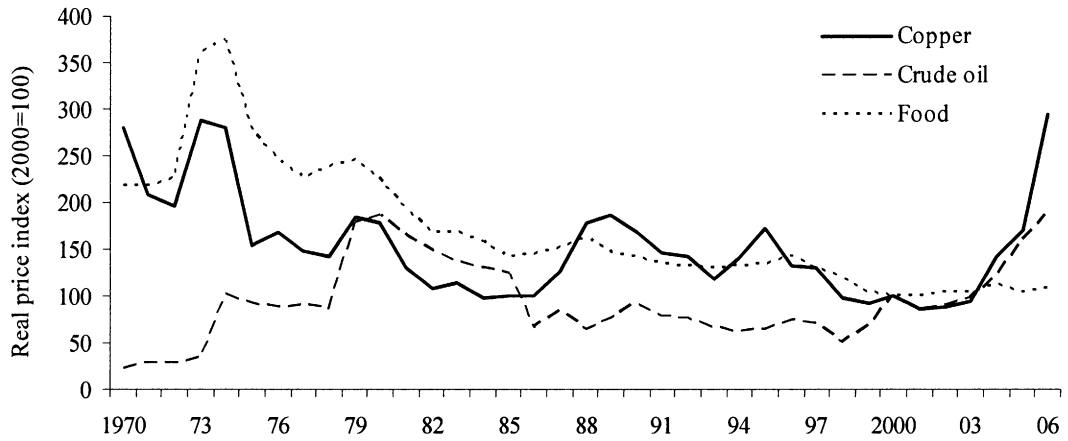
Stakeholders	Interests/roles	
	Pre-1991	Post-1991
Smallholder farmers and commercial agriculture	Rural infrastructure, removal of food price controls	Rural infrastructure, export competitiveness, seed and fertilizer credit
Urban consumers and the Zambian Confederation of Trade Unions (ZCTU)	Low food prices, low inflation, more public sector and industrial jobs, multiparty democracy	Low inflation, more jobs, increased support for urban-based political parties opposing the MMD
United National Independence Party (UNIP)	State-directed industrialization, mining revenues, maintenance of urban electoral support, one-party democracy	
Movement for Multi-Party Democracy (MMD)	Low food prices, low inflation, multiparty democracy	Market-driven development
World Bank and IMF	Structural adjustment	Continued market reforms, debt relief

Policy Options

Zambia's shifting political circumstances have been further complicated by a rise in world copper prices, which began to climb again in 2004 (see Figure 2). Although this price rise provides new opportunities, it could also challenge Zambia's market-driven development strategy (Breisinger and Thurlow 2008). As noted earlier, most state-owned enterprises were privatized during the 1990s. Despite initial reluctance, the government sold its mining assets to a foreign firm soon after 2000. This sale took place at a time when copper prices were low and the inefficient copper mines were hemorrhaging US$1 million a day (McCulloch et al. 2000). The government was therefore forced to offer tax incentives to foreign companies in order to secure the sale and reduce its fiscal deficit (Craig 2001). Negotiated tax rates were set at less than 1 percent of the revenues earned by the copper mines. Thus, although copper prices and profits have risen rapidly since 2004, their effect on government revenues remains small.

At the same time, however, the effect of rising copper prices on Zambia's exchange rate has been pronounced. The real exchange rate appreciated by 25 percent during 2005 alone (World Bank 2007). This rise has undermined the competitiveness of agricultural exports and reduced the profits of commercial agriculture. Falling prices were passed on to those smallholder farmers who had benefited from the rise of agricultural exports during the 1990s (Fynn and Haggblade 2006). Conversely, food crop farmers with good access to input markets have benefited from lower prices for imported fertilizer. These benefits, however, are offset by lower prices for imported foods, which hurt farmers closer to and more dependent on urban markets. In fact, urban consumers are the likely beneficiaries from the appreciation because they have a stronger preference for, and better access to, foreign imports.

Figure 2: Global Commodity Prices, 1970–2006



Source: World Bank 2007, cited in Breisinger and Thurlow 2008.
Note: Dollar-denominated commodity prices deflated by U.S. producer price index.

Given these present circumstances, Zambia now faces a difficult policy choice: should the government raise mining taxes and use these revenues to invest in growth? On the one hand, higher copper prices and an appreciating exchange rate could lead to the kind of Dutch disease experienced during the 1960s and 1970s, thus undermining Zambia's recent successes in export growth and diversification. Back in the 1960s, the government argued that such losses would be temporary if mining revenues were used to promote industrialization. Now, however, the copper mines are owned by private companies whose tax rates are low, and thus current copper revenues are not sufficient to finance large-scale interventionist sectoral policies.

Raising taxes on foreign mining companies offers a number of advantages. Although tax breaks were needed when copper prices were low, copper prices are now at a historic high and mining companies no longer need preferential treatment. Furthermore, the country's exchange rate is already appreciating and undermining agricultural exports, which had driven poverty reduction during the 1990s. Without additional revenues, the government's ability to respond to this appreciation remains limited. If taxes were increased, the government could use the additional revenue to invest in raising the productivity of agriculture and industry. If effective, this step should benefit workers in the food and manufacturing sectors, whose jobs and livelihoods are being threatened by eroded export competitiveness and cheaper imports.

Increasing mining taxes also has disadvantages, however. When private mining companies remit their profits, they are in effect relieving some of the pressure on the kwacha by increasing the demand for foreign currency. If the government increases mining taxes, then more of the copper revenues remain inside the country, thus increasing the demand for kwacha and exacerbating the appreciation. The government therefore finds itself in a difficult situation: if it raises mining taxes to respond to the appreciation but is unable to properly invest in non-mining sectors, then it risks making the appreciation and its negative consequences even worse. So, given Zambia's poor track record in turning mining revenues into productive investments, it may be better to leave mining taxes unchanged. This approach would not address the adverse effects of the current appreciation, but it would minimize the risk of an unsuccessful investment strategy that further undermines agricultural exports and rural incomes.

The choice of whether to use mining revenues to finance economic development suggests that the political economy of Zambia has in some ways come full circle. After independence, the country

adopted a state-directed industrialization strategy financed by copper revenues. Then when copper prices collapsed, the resulting macroeconomic crisis forced a departure from an interventionist approach and a transition to democracy. The new government adopted a market-oriented strategy, which required more restrained macroeconomic policies. The government was forced to limit its sectoral policies with some positive consequences for agriculture and negative ones for the urban sector. Today's government is now struggling to retain its urban base against rising opposition parties targeting the urban poor. This situation may prove enough of an incentive for the government to raise mining taxes and again use these revenues to finance urban-biased policies.

Assignment

Given the current political environment and taking into account the mechanisms through which a change in world copper prices affects the agricultural sector, your assignment is to advise Zambia's government on how to use the revenues gained from increasing mining taxes to improve economic growth and reduce poverty.

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Chapter Nine
Globalization and the Nutrition Transition: A Case Study (10-1)
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Executive Summary

In the current "nutrition transition," the consumption of high-calorie, nutrient-poor foods high in fats and sweeteners is increasing throughout the developing world. The nutrition transition, implicated in the rapid rise of obesity and diet-related chronic diseases worldwide, is rooted in the processes of globalization. Globalization affects the nature of the food supply chain, thereby altering the quantity, type, cost, and desirability of foods available for consumption. Understanding the links between globalization and the nutrition transition can thus help policy makers develop policies, including food policies, for addressing the global burden of chronic disease.

This case study explores how one of the central mechanisms of globalization, the integration of the global marketplace, is affecting specific food consumption trends in the context of the nutrition transition. Focusing on middle-income countries, it highlights the importance of three major processes of market integration: the production and trade of agricultural goods, foreign direct investment in food processing and retailing, and global food advertising and promotion.

It finds that policies and processes designed to advance the globalization of the world economy in the areas of agriculture, trade, investment, and marketing are shaping dietary trends. Thus the policies designed to integrate the global food market matter for what people eat. Dietary outcomes also depend on the socioeconomic and cultural context in which the policies are operating, as well as changes in consumer behavior.

The dynamic, competitive forces unleashed as a result of globalization facilitate not only convergence in consumption habits ("Coca-Colonization"), but also adaptation to products targeted at different niche markets. This convergence-divergence duality raises the policy concern that globalization will exacerbate uneven dietary development between rich and poor. As high-income groups in developing countries accrue the benefits of a more dynamic marketplace, lower-income groups may well experience convergence toward poor-quality obesogenic diets, as observed in Western countries.

Health policy makers should pay greater attention to globalization processes and policies in order to address some of the structural causes of obesity and diet-related chronic diseases worldwide, especially among groups with low socioeconomic status. The benefit of leveraging policies designed to integrate global food markets to encourage healthy diets is that relatively small changes at a macro-scale can have relatively large population-wide impacts.

Your assignment is to advise a government of a middle-income developing country about appropriate policies to mitigate the negative effects of the nutrition transition in the context of globalization, taking into account the interests of the various stakeholder groups.

Background

Globalization and the Nutrition Transition

The "nutrition transition" refers to the trend ongoing in the developing world in which the consumption of foods high in fats and sweeteners is increasing, that of cereals is declining, and the intake of fruits and vegetables remains inadequate (Popkin 1998; Caballero and Popkin 2002). Unlike populations affected by hunger, populations affected by the nutrition transition have diets adequate in energy, but the quality of the diet remains poor and often involves the intake of more energy than needed. Poor-quality diets are a leading risk factor for diet-related chronic diseases, like heart disease, diabetes, and some cancers, as well as overweight, obesity, and hypertension. As a result, the prevalence of diet-related chronic diseases is rising in developing countries. Although the highest death rates from all chronic diseases are still found in high-income developed countries, rates are predicted to increase in all countries—and in

absolute numbers, more people now die of heart disease in developing countries than in developed countries (Strong et al. 2005). Death rates from chronic diseases are also rising among the poor within developing countries (WHO 2005).

The nutrition transition is deeply rooted in the processes of globalization. Globalization is associated with changing incomes and lifestyles. In addition, by radically altering the nature of the food supply chain, globalization is altering the quantity, type, cost, and desirability of foods available for consumption.

Globalization affects food systems around the world. It changes the availability of and access to food through its effects on food production, procurement, and distribution. Such changes bring about a gradual shift in food culture, dietary consumption patterns, and nutritional status (Kennedy et al. 2004). A better understanding of the link between globalization, the food supply, and the nutrition transition is essential in order to locate potential levers for policy interventions to improve diet quality.

Globalization is driven by series of interacting processes, among which the following are critical in driving the nutrition transition:

- liberalization of international food trade;
- liberalization of foreign direct investment;
- global food advertising and promotion;
- emergence of global agribusiness and transnational food companies; and
- retail restructuring (notably the development of transnational supermarkets).

Each of these processes is affected by what are termed here "globalization policies": policies that aim to, in some way, integrate local, national, or regional economies further into the global marketplace. These policies can be implemented at a range of scales—from local to global—by a wide range of stakeholders.

Determining the precise relationship between globalization processes and policies and the nutrition transition is a challenge because of the complex and multidimensional interactions between global economics and health in general (Harris and Seid 2004). Different perspectives give rise to an often polarized debate about the impacts of globalization on health (Lee et al. 2002). Some say globalization is mainly good for health (Dollar 2001); others, that it is inherently problematic (Berlinguer 1999). The reality is that globalization, like any policy choice, is likely to bring threats and opportunities, improving health in some circumstances and damaging it in others (Cornia 2001).

The actual effects of globalization processes and policies are largely dependent on the global, national, community, and household contexts in which they are operating (Labonte 2004). In other words, homogenizing processes can have very heterogeneous effects, so the same globalization processes can have different outcomes for different groups of people.

Globalization is therefore a dynamic process of both mass global change and local, contextualized differentiation. In dietary terms, these forces can be articulated as "dietary convergence" and "dietary adaptation"; each, in a seemingly contradictory unity, is part and parcel of the nutrition transition. According to Kennedy et al. (2004, 9), dietary convergence is "increased reliance on a narrow base of staple grains, increased consumption of meat and meat products, dairy products, edible oil, salt and sugar, and a lower intake of dietary fibre." Indeed, analysis by the Food and Agriculture Organization of the United Nations (FAO) suggests that diets in countries more integrated into the world economy are converging in terms of primary commodities (Bruinsma 2003). On the other hand, dietary adaptation is "increased consumption of brand-name processed and store-bought food, an increased number of meals eaten outside the home, and consumer behaviours driven by the appeal of new foods available" (Kennedy et al. 2004, 9). Convergence, the authors argue, is driven mainly by changes in income and price. Adaptation, in contrast, is driven by demands on time, increased exposure to advertising, availability of new foods, and emergence of new food retail outlets.

This case study investigates how policies implemented to advance the globalization of the food supply chain are linked with the coexistence of the apparently contradictory processes of dietary convergence and adaptation. Focusing on middle-income countries, it explores one of the central mechanisms of globalization: the integration of the global marketplace—specifically, the impacts of three major processes of market integration on dietary patterns. The three processes are (1) the production and exchange of goods, presented here in the form of agricultural production and trade;

(2) the flow of investment across borders in the form of foreign direct investment (FDI) in food processing and retailing; and (3) the global communication of information in the form of promotional food marketing. These processes represent important aspects of the food supply chain from production to consumption.

Agricultural Production and Trade

Global market integration is characterized by a combination of formerly separated markets into a single market. Agriculture is central to this aspect of globalization and the theory of comparative advantage that lies behind it (that is, the production of agricultural goods should be located where there is a comparative advantage in producing them, owing to factors such as climate, labor, and access to technology). In a globally integrated agricultural market, the idea is that nations specialize in producing food consistent with their resource endowment and then trade those foods among themselves. The desired result is greater economic efficiency, a more consistent food supply, lower costs of production, and, in theory, cheaper food.

Before modern economic globalization, countries tended to favor the protection of domestic agricultural markets, a tendency clearly inconsistent with the theory of comparative advantage. Increasing the market orientation (that is, the degree of liberalization) of the production and exchange of agricultural goods within and between nations has thus become a critical component of globalization. During the 1970s and 1980s, many low- and middle-income countries underwent "structural adjustment," which included implementing more market-oriented agricultural policies. The pace of reform accelerated in the 1990s as many countries liberalized their agricultural markets internally and internationally. Regional trade agreements, signed at a steady but slow pace through 1970s and 1980s, soared to a rate of 15 per year in the 1990s (FAO 2004). And in 1994 agriculture was included in global trade rules for the first time: the Agreement on Agriculture of the Uruguay Round of the General Agreement on Tariffs and Trade (GATT) committed countries to reducing tariffs, export subsidies, and domestic agricultural support. Bilateral agreements and new rules on technical barriers to trade also affected food and agricultural trade. This range of policy shifts over the past 20–30 years has led to a more liberal global agricultural marketplace, although it cannot yet be described as "open" because high levels of protection still exist in various forms.

This liberalizing agricultural market has enabled more and different food trade, higher foreign investment, and the enlargement of transnational food companies (TFCs). In developing countries, food import bills as share of gross domestic product (GDP) more than doubled between 1974 and 2004, and processed agricultural products rose much faster as a share of trade than primary agricultural products (FAO 2004). More open trade and investment have made it easier to buy companies, products, and services across national borders, creating incentives for TFCs to grow through global vertical integration and sourcing (Heffernan et al. 1994). Global vertical integration—when a company brings together the entire process of producing, distributing, and selling a particular food under its control by buying and contracting other companies and services worldwide—reduces the transaction costs associated with having different suppliers and creates economies of scale (Martinez 2002). Global outsourcing—when a company searches for inputs, production sites, and outputs where costs are lower and regulatory, political, and social regimes favorable—enables TFCs to cut costs and helps safeguard against the uncertainty of commodity production and product sales (Heffernan et al. 1994).

It is well documented that these changes in the global food supply chain have affected agricultural producers. Less well documented is how they have altered the supply of foods associated with the nutrition transition. Vegetable oils are a case in point. Oil crops have been one of the most dynamic agricultural sectors in recent decades. Production (in metric tons) grew at a rate of 4.1 percent per year between 1979 to 1999, relative to 2.1 percent for agriculture as a whole (Bruinsma 2003). World oil crop production increased by more than 60 percent between 1990 and 2003, with growth driven by the top three oils: soybean, palm, and canola/rape. Growth has been concentrated in Asia and Latin America rather than in the traditional production zones of North America and Western Europe. Between 1994 and 2004, edible oil production in China increased nearly twofold, soybean oil production in Brazil by one-half and in Argentina twofold, and palm oil production in Malaysia by two-thirds (Beckman 2005).

Similar trends are seen for consumption. Between 1990 and 2003, vegetable oil consumption in the

United States and Western Europe increased by just one-quarter, whereas it doubled in China and increased by one-half in India. Overall, between 1982–1984 and 2000–2002 vegetable oils contributed more than any other food group to the increase in calorie availability worldwide (they contributed an additional 70 kilocalories/capita/day) (FAO 2005). Vegetable oils can thus clearly be implicated in rising dietary fat intakes worldwide (Drewnowski and Popkin 1997).

Increased consumption can be explained not only by rising demand, but also by supply-side policies, as illustrated by the experiences of the three largest emerging economies, Brazil, China, and India, with soybean oil. The world's leading vegetable oil, soybean oil is used widely as a cooking oil and, often in partially hydrogenated form, in processed foods.

Brazil is the world's second-largest soybean producer and exporter (the United States is the largest producer and Argentina the largest exporter). During the 1960s and 1970s, government policies explicitly promoted the production, export, and domestic consumption of soybean oil (Schnepf et al. 2001). In the 1990s, in line with the globalization agenda, the government opened up its soybean market and reduced government intervention. New policies reduced restrictions on foreign investment (to encourage the entry of more foreign capital into the soybean market), restructured farm income taxes (to encourage greater investment in soybean production), lowered import tariffs on fertilizers and pesticides (to facilitate higher soybean yields), and eliminated the soybean export tax (to promote greater exports) (Schnepf et al. 2001). The government also implemented the "*Real* [currency] Plan," which altered the nation's economic conditions. Devaluation of the *real* later in the decade caused the cost of Brazilian beans on the world market to fall (Beckman 2005). As intended, these policy changes spurred acceleration of production and exports. Production costs fell and returns to producers rose. Combined with the abundant availability of low-cost land, this situation encouraged farmers to bring more land into production (USDA 2004). And in light of lower production and transportation costs, vertically integrated TFCs, such as U.S.-based Cargill (the largest soybean exporter in Brazil) and Bunge (the largest soybean processor), increased their investments in the Brazilian crushing industry (Schnepf et al. 2001).

The result of these policy shifts was a 67 percent increase in soybean oil production between 1990 and 2001, a more than doubling of exports, and one of the lowest soybean oil prices worldwide (Beckman 2005). But somewhat ironically, the massive growth in soybean oil production in the 1990s is not associated with increased consumption in Brazil. Although the data are difficult to interpret, per capita calorie consumption (already relatively high) appeared to decline, or at least stabilize, during the 1990s. Rather, production was delivered to the global market, facilitating dietary changes across the globe in countries, like China and India, that were also liberalizing their markets in line with the globalization agenda.

China implemented new tax and import regulations to encourage soybean oil imports and greater domestic production in the 1990s (Beckman 2005). Brazil, able to produce at low prices, became a major source for China of soybeans (for crushing) and soybean oil (Hsu and Gale 2001). Between 2002 and 2004, Brazil remained a crucial supplier of soy to China when greater trade openness led to a doubling of agricultural imports, of which soy formed a large proportion (Gale 2005). Consequently, the calories available from soybean oil in China increased dramatically from 27 to 78 per capita per day between 1989–1991 and 2000–2002. Although this growth probably brought some benefits to underconsuming populations, consumption of vegetable oils in urban and some rural areas now exceeds recommended levels, a trend the Chinese government has identified as a source of concern given the rapidly rising rates of obesity and chronic diseases in the country (Ma 2004). Recent trade policies will likely increase the ready availability of soybean oil. China's accession to the World Trade Organization (WTO) has reduced import tariffs and quantitative restrictions, and these changes are predicted to significantly increase soybean oil imports, lower prices, and increase demand (Hsu and Gale 2001). Moreover, China continues to view Brazil as a good source of cheap soybeans: the Chinese government is planning to invest US$5 billion in Brazilian transportation systems to help them continue to produce soybean oil at competitive prices (U.S. Commercial Service Brazil 2005).

India, itself the world's fifth-largest producer of soybean oil, likewise imports Brazilian soybeans and oil. In the mid-1990s India was a relatively small importer of vegetable oils; by 1998 the country had become the world's leading importer (Dohlman et al. 2003). This rapid change is directly related to market liberalization. In 1994/1995, as part of unilateral efforts to liberalize trade and the need to

follow international rules negotiated under the GATT (which culminated in the signing of the Agreement on Agriculture and the founding of the WTO), India eliminated the state monopoly on vegetable oil imports (Dohlman et al. 2003). In the face of low domestic production, imports increased significantly, especially of the lowest-cost oils. Between 1989–1991 and 2000–2002, palm oil imports increased from 0.35 to 3.32 million metric tons, and soybean oil from 0.26 to 1.05 million metric tons (FAO 2005). Brazilian (and Argentinean) soybeans and oil were favored owing to their lower price and transportation costs relative to the United States. Brazil also had the advantage of a high season and thus cheaper beans during the seasons of low production in India (Dohlman et al. 2003). The result was lower prices for vegetable oils, increased consumption, and increased share of consumption of imported oils: by the end of the 1990s, soybean oil accounted for 21 percent of consumption (and palm oil, 28 percent). This stands in stark contrast to the complete dominance of consumption of peanut, rapeseed, and cottonseed oil in the 1970s, a reflection of domestic production (Dohlman et al. 2003). Today, prices of edible oils in India are now more affected by soybean output in Argentina, Brazil, and the United States than by domestic production (Prasad 2004).

This complex web of economic globalization illustrates how a series of policy reforms in three different countries had the effect of integrating the global soybean oil market and, in so doing, facilitated the worldwide convergence of higher soybean oil consumption worldwide. Dietary convergence has occurred not only in the use of soybean oil in cooking, but also in partially hydrogenated form in processed foods. Partial hydrogenation leads to the creation of trans fats, which increase the risk of coronary heart disease (FDA 2003). As a means of discouraging consumption, governments in Brazil and the other members of the Southern Common Market (Argentina, Paraguay, Uruguay, Venezuela), Canada, and the United States have ruled that trans fats must be labelled on packaged foods (Hawkes 2004a). Yet dietary convergence of soybean oil consumption is likely to continue: the WTO is expected to reach an agreement in the next few years to further liberalize the vegetable oils market (Beckman 2005). Along with implications for consumption of total fat and trans fats, this trend introduces health concerns because it is likely to change the overall balance of fatty acids consumed in the global diet (Wallingford et al. 2004).

Importantly, though, the increasingly integrated nature of the soybean oil market is equally likely to facilitate dietary adaptation. The increased supply of soybean oil on the world market is leading to greater competition with alternative oils, thereby providing a bottom-line incentive for increased differentiation (Beckman 2005). The process is already in evidence, with TFCs adapting soybean oil to appeal to higher-value market niches, in this case, the wealthy "health-conscious consumer" aware of the detrimental health effects of trans fats. In September 2004, Monsanto, in partnership with Cargill, announced the development of the "Vistive™" soybean (Monsanto 2007). The bean has a low linolenic acid content and thus a reduced need for partial hydrogenation, which in turn will lead to a lower trans fat content. Cargill intends to pay producers a premium for the beans, which will be passed on to food processors and eventually to consumers willing to pay more for a product free of trans fat. In October 2004, competitor DuPont, in partnership with Bunge, introduced a soybean with similar properties, "Nutrium™" (Bunge 2004). In years to come, it is possible that leading companies will compete as much on high-priced oils for health as on low prices for the mass market; the former will encourage dietary adaptation, while the latter will encourage convergence. Thus the processes driving the global market integration of vegetable oils may well have different outcomes for low- and higher-income consumers.

Foreign Direct Investment in Food Processing and Retailing

Like trade, international investment, through which companies buy, sell, and invest in companies in other countries, plays a fundamental role in integrating the global marketplace. One of the most important types of investment is foreign direct investment (FDI), defined as a long-term investment by an individual, government, or enterprise in one country into an enterprise in another. It is one of the processes through which vertical integration can take place and TFCs can grow. FDI in developing countries grew more than sixfold between 1990 and 2000—faster than either GDP or trade (Mody 2004). It is now the largest source of external financing for developing countries (UNCTAD 2000).

The global regulatory environment around FDI has become significantly more liberal in past decades. Between 1991 and 1999, there were 1,035 changes in regulations governing FDI worldwide; 94 percent of

these changes facilitated FDI by decreasing disincentives or increasing incentives (UNCTAD 2000). Many of the new regulations were forged in trade agreements and investment treaties: the number of bilateral investment treaties rose from 181 at the end of 1980 to 1,856 at the end of 1999 (UNCTAD 2000). As with trade, fewer barriers and more incentives to invest enable transnational companies to cut costs, gain market power, and obtain efficiencies in marketing and distribution. This liberalization has brought huge changes in the global agrifood system, as already shown by the case of vegetable oils.

In the 1970s, the first major phase of FDI in the food supply chain focused on producing raw commodities for export, as TFCs such as Cargill and Bunge invested abroad in oil crops and cereals for export. In the 1980s, as liberalization accelerated, FDI began to shift away from raw materials for export to processed foods for the host market, as TFCs such as PepsiCo and Nestlé invested in foreign manufacturing facilities for foods such as soft drinks, confectionary, dairy products, baked goods, and snacks.

Within the food system, food processing is now the largest recipient of FDI, and FDI is more important in the global processed foods market than trade. U.S. FDI in foreign food-processing companies grew from US$9 billion in 1980 to US$36 billion in 2000. Sales by those companies increased from US$39.2 billion in 1982 to US$150 billion in 2000 (Bolling and Somwaru 2001). Trade, by contrast, generated a relatively small US$30 billion in processed food sales in 2000. Investments in outlets selling processed foods have also soared, especially since 1990. FDI from U.S.-based supermarket chains grew to nearly US$13 billion in 1999, up from around US$4 billion in 1990 (Bolling and Somwaru 2001). In 1998 U.S.-based TFCs such as McDonald's and KFC invested US$5.7 billion in restaurants, including fast food outlets, overseas (Harris et al. 2002). Although a high proportion of this FDI is still targeted at high-income countries, an increasing proportion is entering developing and transition markets, notably in Asia, Central and Eastern Europe, and Latin America (see Hawkes 2005).

FDI is thus playing a role in the nutrition transition by shaping the processed foods market and making more processed foods available to more people (Hawkes 2005). As detailed in Hawkes (2005), FDI has made it possible to lower prices, open up new purchasing channels, optimize the effectiveness of marketing and advertising, and ultimately increase sales. The result has been a dual process of dietary convergence toward processed food consumption (albeit not among the lowest-income consumers) and dietary adaptation to a wider range of processed foods targeted at different niche markets.

This process is illustrated by the case of Mexico, where overweight and obesity increased 78 percent between 1988 and 1998, from 33 percent to 59 percent, with the greatest relative changes occurring in the poorer southern region (81 percent) compared with the wealthier north (46 percent) (Rivera et al. 2002). The North American Free Trade Agreement (NAFTA), signed by Canada, Mexico, and the United States in 1994, contained key provisions designed to facilitate foreign investment. A significant consequence of these more liberal investment rules was a rapid acceleration of FDI from the United States in Mexican food processing. In 1987 U.S. FDI in the Mexican food-processing industry was US$210 million. By 1997, this figure had increased to US$5 billion, three-quarters of which went into highly processed foods such as snacks (Bolling et al. 1999). FDI stimulated the growth of the processed foods market in Mexico during this period. Although few data are available on processed food consumption, between 1995 and 2003 sales of processed foods (such as soft drinks, snacks, baked goods, and dairy products) expanded by 5–10 percent per year.

During the same period, NAFTA stimulated the growth of transnational retailers. The number of chain supermarkets, discounters, and convenience stores grew from fewer than 700 in 1993 to 3,850 in 1997, and to 5,729 in 2004, to account for 55 percent of all food retailers in Mexico. Although the remaining 45 percent of food retailers—thousands of traditional, family-owned, general merchandise stores or street vendors and open markets—sell many soft drinks and snacks, they are experiencing significant competition. The amount of food purchased from *tiendas* is declining year by year as they close in the face of competition from other retailers, particularly convenience stores: according to the Mexican Chamber of Commerce, five *tiendas* close for every convenience store that opens (Condesa Consulting 2005).

The growth of supermarkets and other modern forms of food retail stores has important long-term implications for the expansion of the processed

foods sector. Over the long term, the market for processed foods grows through segmentation, which involves the development of new products targeting different market niches to activate and reactivate demand in a changing consumption environment (Wilkinson 2002). Because of their size, capital base, economies of scale in storage and distribution, and technological advancements in supply logistics, supermarkets are able to make available a far wider range of processed foods than *tiendas* and convenience stores. They can also take the risks inherent in introducing new foods and frequently update their stock to create and adapt to demand, thereby delivering the market segmentation strategy of the processed foods industry.

Delivering recent innovations in the diet foods market is a case in point. To target the more affluent, health-conscious niche, the leading supermarket, Walmex, now stocks more than 250 diet products, including low-carb chocolate and sugar-free candy, and reports that consumer spending on such products is increasing (Kelly 2005). Sales of these relatively high-priced diet foods rose by 20 percent in Mexico in 2003, a rate that is expected to continue (Latin America News Digest 2004). Yet the very same supermarkets also manage their stock to fill the lower-income, budget-conscious niche: they increase shelf space for cheaper, private label goods and "B-brands," and they introduce smaller pack sizes, which although more expensive per unit, are more affordable because of their lower price (BMI 2005).

One of the central processes of global market integration—FDI in processed foods and in retailing—is thus facilitating not only dietary convergence toward consumption, but also adaptation to dietary niches. If this dynamic continues, the process of convergence could well lead to divergent dietary outcomes between rich and poor.

Food Advertising and Promotion

Owing to its visibility, promotional food marketing has become one of the hallmarks of globalization. Coca-Cola signs, ubiquitous in countries around the world, are a classic symbol of what is often assumed to be the homogeneous nature of globalization. The intended impact of marketing on food consumption is also much more apparent than that of trade or FDI. Marketing explicitly involves designing strategies and implementing activities to influence consumption habits and create demand. It involves not just advertising, but a whole array of methods including sales promotions, websites, music and sports sponsorship, product placement in films and television, and in-school marketing. TFCs, and the advertising and marketing agencies that serve them, use these techniques to encourage more people to consume the product, more frequent consumption among people already familiar with the product, and consumption of more of the product at one time. Food advertising and promotion is now a global phenomenon, occurring in even remote parts of the world (Hawkes 2002). During the period 1980 to 2004, global advertising expenditures rose from US$216 billion to US$512 billion (Worldwatch 2004). Promotions for energy-dense, highly processed foods aggressively target young people, aiming to influence food consumption patterns that will carry into adulthood. In Western countries at least, such advertising has been shown to influence dietary habits among children (Hastings et al. 2003; McGinnis et al. 2006).

Marketing is more than just a visible and tangible form of globalization. It is also, like trade and FDI, a process of globalization. Marketing speeds the flow of food products spread by trade and FDI into the global marketplace. In a larger, more dynamic marketplace, companies benefit from rapid product turnover, and marketing speeds up this process. It does so by attracting attention to new products, creating perceived differences between similar products, and improving the apparent value and desirability of products. Marketing encourages more consumers to consume the products and more producers to produce them, thus advancing the cycle of global market exchange and integration.

It is a self-reinforcing process. Just as marketing facilitates globalization, globalization facilitates marketing. Globalization brought to the developing world the advertising and marketing agencies with the most expertise in designing marketing campaigns. From the 1980s onward, advertising agencies transnationalized and consolidated through FDI, mergers, and acquisitions, growing into huge, vertically integrated global corporations (Leslie 1995). The process was driven by a range of incentives: the companies that commission the services of marketing agencies were transnationalizing, as were the media networks they utilize; communications technologies were improving; the market for communications services was becoming more open owing to domestic deregulation and trade agreements; and prospects of higher profits and revenue

growth were greater overseas (Daniels 1995). Today, just a handful of communications networks control most of the global market. Though mainly headquartered in Europe, Japan, or the United States, networks and agencies have hundreds of local offices worldwide. An important outcome of this global consolidation was that agencies previously concerned solely with advertising bought in expertise in nonmedia advertising, market research, and communications services, allowing them to supply their clients with coordinated and comprehensive campaigns encompassing a wide range of promotional techniques (Leslie 1995). Globalization also enabled the spread of technologies that introduce more places to advertise. Television ownership spread rapidly through the developing world during the last decades of the 20th century, accompanied in the 1990s by the market liberalization of public television and a subsequent increase in commercial programming (James 2000). More recently, technological development has further broadened global communication networks, notably through the Internet and phone networks (Tharp and Jeong 2001).

The globalization of food marketing thus consists of three core components: the globalization of TFCs and the foods they promote; the globalization of advertising/marketing agencies; and the globalization of communication technologies. These components interact to increase the power of marketing as an agent of dietary change. Thailand is a good example. The advertising and promotions industry in Thailand is among the most developed, dynamic, and creative in Asia. From 1987 to 1996, advertising expenditures grew nearly 800 percent, and advertising revenues have grown in double-digit figures in recent years, standing at around Bt 85 billion (US$2.0 billion) in 2004. Two sets of policies have contributed to this dynamism, both related to the country's tradition of openness to trade and investment. First, foreign ownership of advertising and marketing agencies is not restricted, and although advertising is regulated to some degree, campaigns are not subject to restrictions like maximum foreign content requirements. Second, free trade agreements (such as the GATT/WTO framework and the Association of Southeast Asian Nations [ASEAN] Free Trade Area) have encouraged the influx of foreign brands (including many food brands), creating an incentive to promote differentiation between brands and products within and between domestic and multinational companies.

This relatively open market encouraged TFCs to enter Thailand and use the established network of global marketing and communications agencies to develop highly sophisticated marketing campaigns drawing on wide variety of promotional techniques. They were aided by an existing cultural context: unusually widespread television ownership (Ruangdaraganon et al. 2002; Green 2003). Even very low-income families who cannot afford to buy televisions watch it as a communal activity in cafes and food stalls.

The U.S. snack company Frito-Lay presents a good example of successful marketing (Box 1). When Frito-Lay first consolidated its presence in the country in 1999/2000, per capita snack consumption was still relatively low (1 kilogram [kg] per person per year in 1999, compared with 3kg in Mexico and 10kg in the United States). So the company developed an aggressive strategy to increase consumption, more than doubling their promotional spending between 1999 and 2003. Frito-Lay's strategy proved successful. Their share of the total snack market grew from the low single digits in the mid-1990s to 30 percent by 2003, and sales increased from Bt 885 million (US$21.6 million) in 1997 to Bt 2,865 million (US$70.0 million) in 2002 (Euromonitor 2005). The entry of Frito-Lay into the market also stimulated increased total snack sales. Snacks sales grew particularly rapidly during 1999–2004, the period of most intensive marketing, and sales volumes of most heavily promoted products (chips and extruded snacks) increased by the largest amount (63 percent and 69 percent, respectively).

Policy Issues

Transnational Food Companies Affect Dietary Change Directly and Indirectly

TFCs are key institutions driving the integration of world food markets. They produce, sell, and promote products according to incentives created by policies and economics as well as consumer behavior. TFCs affect dietary habits directly by producing, manufacturing, retailing, and promoting different foods eaten in different countries. Public attention has tended to focus on the highly processed foods manufactured by TFCs, and the example of Mexico shows that these products can be widely consumed. Yet in most countries, many highly processed foods are still consumed largely by more affluent groups in urban areas (Adair and

Box 1: Examples of Frito–Lay marketing strategies in Thailand, 1999–2003

1999

- Total annual marketing budget estimated at Bt 170–180 million (US$4.2–4.4 million) (Rungfapaisarn 1999b).
- Budgeted Bt 45 million to promote new Doritos, targeting 15- to 24-year-olds with ads featuring model and MTV VJ Sonia Cooling; distributed 2 million free samples. The promotions aim to find "mostly new customers" for Doritos rather than just switching from other brands (Jitpleecheep 1999).
- Formed marketing alliance with Major Cineplex to promote Frito-Lay products in conjunction with Star Wars I (Rungfapaisarn 1999b).

2000

- Marketing budget "at least" Bt 200 million (US$4.8 million) (Srimalee 2000).
- Launched extruded snack brand "Tawan" in alliance with local manufacturers to compete in provincial Thailand (Rungfapaisarn 2000).
- Formed a strategic alliance with Nokia (Thailand) to target Doritos at new customers. Consumers who collected four jigsaw pieces to make up an image of a cell phone received a Nokia phone. The promotion cost Bt 40 million (*Bangkok Post* 2000).

2002

- Frito-Lay announced it would double its spending on promotional marketing to Bt 400 million (US$10 million) (*The Nation* 2002).
- Introduced larger snack packets offering 20 percent more content but with no increase in price, and offered three packets for the price of two (Jitpleecheep 2002).
- Redesigned package for Doritos.

2003

- Launch a new flavour, "Tawan larb," to appeal to "provincial consumers"; promoted it with a Bt 50 million advertising campaign featuring Thai actress singer Pornchita "Benz" Na Songkhla (Knight Ridder/Tribune Business News 2003).
- Launched Lay's Nori seaweed, spending Bt 200 million on promotion using British-Thai actress Kathaleeya McIntosh, chosen because of her "look-good" image (*Bangkok Post* 2003; *The Nation* 2003a; Jitpleecheep 2003).
- Launched new Lay's potato chips, Lay's Siam Classic, spending Bt 50 million to promote the product, including TV commercials, radio spots, magazine ads, cinema ads, promotional materials such as posters, and free samples (*The Nation* 2003b).
- Aimed to "widen its customer base from teenagers to consumers aged 18–45 years" (*Bangkok Post* 2003).

Popkin 2005). At the moment, TFCs are probably playing a more important role in dietary change indirectly, by altering the parameters of the domestic food markets. They stimulate competition while simultaneously dominating product sectors, which alters the food market as a whole. They also create a cultural identity for different foods and introduce new ways to sell and promote them.

The Effects of Policies and Institutions Are Mediated by Existing Resources, Services, and Technologies

Existing resources, services, and technologies have a major influence on the outcomes of global and national economic policies (and, indeed, influence their design). As shown here, policies designed to promote domestic production and global consumption of Brazilian soybean oil were possible only in the context of an abundant and cheap supply of land. Policies on FDI in processed-foods manufacturing in Mexico paid off in part because of the existence of traditional forms of retailing. In Thailand globalized marketing strategies were nationally effective, in large part because of historical patterns of TV ownership.

Globalization Influences Dietary Differentiation as Well as Convergence

Globalization is often viewed as "Coca-Colonization" or "McDonaldization"—a homogeneous process with homogeneous outcomes. But this case study has shown that the dynamic, competitive forces unleashed as a result of global market integration produce both convergent and divergent dietary outcomes. The case studies show how market integration increases the incentive for TFCs to sell cheap or standardized food around the world, while simultaneously increasing the incentive to create market niches. The creation of similarity and difference is thus part and parcel of the same process—the logical functioning of the global marketplace. In dietary terms, this means that more people eat more soybean oil and processed foods, for example, but different types of people eat different types of these foods bought from different types of stores and possibly influenced by different types of marketing techniques. This convergence-divergence model unites the apparently contradictory observations that, on the one hand, global market integration homogenizes diets and, on the other, brings greater food variety.

Globalization Could Be Encouraging Different Dietary Habits for Rich and Poor

It has been argued elsewhere that the increased differentiation brought by globalization promotes better diet quality by increasing people's access to dietary diversity (Regmi et al. 2004). The same could be said of urbanization. Following this argument, the problem of obesity becomes one of diet quantity (people eating too much of a wide variety of nutritious foods), not quality (people eating a diet dominated by nutrient-poor, energy-dense foods).

Yet the convergence-divergence duality raises the policy concern that globalization could be encouraging the uneven development of new dietary habits between rich and poor. As high-income groups in developing countries accrue the benefits of a more dynamic marketplace, lower-income groups may experience convergence toward poor-quality obesogenic diets, as has been observed in Western countries. People of low socioeconomic status (SES), although not the poorest of the poor, are more likely to be influenced over the long term by the converging trends of the global marketplace: the economic and cultural convergence toward cheap vegetable oils, trans fats, and imitations of heavily promoted products whose desirability has been stimulated by their earlier popularity among wealthier groups. Meanwhile, the more affluent and educated move on to the more expensive, "healthy market" niches such as the trans fat–free vegetable oils and "diet" foods.

The Influence of Globalization Policies on Dietary Patterns Is Context-Specific

The divergent nature of the dietary outcomes of globalization is also a result of regional, national, and local contexts. National socioeconomic bifurcation and the cultural context are particularly important (Labonte 2004). In high-income countries, the prevalence of poor-quality diets, obesity, and diet-related chronic diseases tends to be higher among groups with lower SES. Unfortunately, this trend is now also beginning to emerge in middle-income countries. A recent review of the evidence concluded that as gross national product (GNP) increases in developing countries, the burden of obesity tends to shift toward groups with lower SES. After countries have crossed over a GNP threshold of about US$2,500 per capita, women with low SES tend to have proportionally higher rates of obesity (Monteiro et al. 2004). In other

words, obesity starts out as a problem among groups with higher SES, but as national economies grow, the risk moves toward groups with lower SES. This duality feeds off of existing socioeconomic inequalities. For example, in Brazil, there is a strong inverse relationship between obesity and education in women, indicating an important association between education and nutritional knowledge (Mbuya et al. 2005). Poor diets and obesity are emerging in this socioeconomic context.

Culture is another important context. In the Brazilian case, a culture of "thinness" exists in more highly educated groups, no doubt reinforcing the role of education in this particular country context; the opposite is true in other cultures. The cultural context also affects the degree of acceptability of new products and services introduced through the globalization process, a factor that is particularly relevant for promotional activities. In an apparently contradictory process, the "glocal" marketing strategies adopted by TFCs and domestic firms often deliberately appeal to existing cultural viewpoints or traditions in order to change cultural norms and rules about what to eat, how, where, and how much (Hawkes 2002). This is the true power of marketing and indicates the importance of "cultural transition" in dietary change (Lang and Rayner 2005).

Altogether, the processes of differentiation combined with convergence, the differences between rich and poor, and the role of the socioeconomic and cultural contexts make up a "convergence-divergence model" of dietary change rather than a simple transition.

Main Stakeholders

World Health Organization

The World Health Organization (WHO) is responsible for guiding globally coordinated action in all health matters. To provide global guidance in the area of the nutrition transition, obesity, and diet-related chronic diseases, the WHO developed a Global Strategy on Diet, Physical Activity, and Health in 2004 (WHO 2004). It is not a legally binding document, but it sets out the policy options available to countries to promote healthier diets in the context of the nutrition transition. This document follows a long history of WHO resolutions on chronic diseases (Yach et al. 2004).

National Governments

Governments are responsible for developing national health policies. Although many governments around the world are aware of the problem of chronic disease, the majority do not have comprehensive policies and budgets to develop integrated approaches to their prevention, surveillance, and control (Yach et al. 2004). Given the rapidity of the nutrition transition, governments should develop policies aiming to prevent obesity and diet-related chronic diseases and promote healthy diets, especially among lower-income groups. Such policies should include looking beyond the health sector and entering into policy arenas dealt with by other sectors and disciplines.

Transnational Food Companies

TFCs tend to dislike government regulation and favor self-regulatory approaches and the provision of incentives to change. A combination of government regulation and self-regulation is appropriate to apply pressure for change without creating a prohibitive business climate. Many of the world's largest TFCs are now making commitments to create a healthier food environment; action is needed to ensure that these steps have measurable outcomes and are applied in both developing and developed countries.

Consumer- and Health-oriented Nongovernmental Organizations

Nongovernmental organizations (NGOs) have the advantage of a wide geographic spread and the ability to build capacity. Yet NGOs have made no overall, concerted effort to advocate solutions to the nutrition transition. NGOs should play a more important role in lobbying for specific policy actions, conducting research into consumer concerns about obesity and unhealthy diets, and tracking commitments made by TFCs and governments.

Policy Options

The role of globalization in the nutrition transition has clear implications for stakeholders' actions to address poor diets, obesity, and diet-related chronic diseases. Policies to support such action should be based on three principles. First, policies should be developed with full awareness of the influence of globalization processes and policies on long-term dietary change, and the context in which

they operate. Such an awareness requires looking beyond the health sector as narrowly defined and entering into debates and policy arenas dealt with by other sectors and disciplines. Second, policies should address, in some way, the behavior of TFCs, preferably by creating incentives to improve the functioning of markets for healthy foods and disincentives for foods that contribute to unhealthy diets. Third, policies should focus on the promotion of healthy diets over the long term among groups with low SES. This case study focuses on groups with access to diets sufficient in energy, but diet quality is also important for those at risk from undernutrition. Policies that focus on diet quality are therefore important for addressing problems across the whole nutritional spectrum.

Thus far, there are few comprehensive sets of policies addressing obesity and diet-related chronic diseases in the developing world. This situation may begin to change following the passage of the World Health Organization's Global Strategy on Diet, Physical Activity, and Health in 2004 (WHO 2004). But even in high-income countries, policies still tend to focus on consumer behavior; there is reluctance to tackle the more structural drivers of change. This reluctance partly reflects misunderstandings about chronic diseases, the lack of evidence in the hands of policy makers, and the low capacity for policy development (Yach et al. 2004). But it also reflects the fact that implementing such policies necessitates confronting the powerful forces and institutions of the global marketplace, which governments actually often want to strengthen as a means of creating wealth. This is doubly a challenge because wealth can benefit health: higher GNPs are associated with higher life expectancies. Policies are thus needed to promote *healthier* economic development.

Two commonly proposed strategies are nutrition labeling and regulation of food marketing practices (Hawkes 2004a). Labeling is probably the most widely used population-level policy and has potential: dietary adaptation shows that consumers do have real power in the modern food system and can be responsive to information. In turn, this consumer empowerment can be a powerful incentive for TFCs to change their products. Yet the benefits of policies based on the provision of information may accrue mainly to groups already more educated about nutrition, with implications for unequal dietary development.

Restricting food advertising and promotion could also alter signals to consumers and encourage product changes (Hawkes 2004b). It would have the effect of creating a more supportive environment for health promotion efforts. Equally, marketing could be used more effectively to promote healthier foods, a strategy that has delivered some success through supermarkets and other points-of-purchase (Seymour et al. 2004). The concern here is that marketing regulations must confront not only TFCs, advertising agencies, and new technologies, but also the long line of incentives in agriculture, trade, and investment behind the food entering the market in the first place. Otherwise, policies that are relatively close to the consumer, such as labeling and marketing, are worthwhile but prone to being undermined.

To alter the incentives in the global marketplace from farm to fork, policies to effect change closer to the point of production are needed. FDI is a case in point. FDI represents a single, upstream entry point to many of the dynamics influencing the production, sale, and promotion of foods in the global marketplace and thus could be an effective lever for change (Hawkes 2005).

Assignment

Your assignment is to advise a government of a middle-income developing country about appropriate policies to mitigate the negative effects of the nutrition transition in the context of globalization, taking into account the interests of the various stakeholder groups.

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Chapter Ten
Producer Subsidies and Decoupling in the European Union and the United States (10-2)

by Maria Skovager Jensen and Henrik Zobbe

Executive Summary

Since 1986 agriculture has been a major part of multilateral trade negotiations under the General Agreement on Tariffs and Trade (GATT), and since 1995 under the World Trade Organization (WTO). The main objective of these negotiations is to promote free trade through disciplinary rules and reduction of trade-distorting policies. The Uruguay Round Agreement on Agriculture (URAA) from 1993 established the current disciplinary framework for agricultural liberalization of domestic support, market access, and export competition.

Domestic agricultural support is considered trade distorting if it is coupled to production. The URAA introduced a reduction commitment of 20 percent on some types of coupled support. The reduction commitment was calculated on the basis of average support given in 1986–1988. Unfortunately, these years were peak years, when world market prices were low and therefore agricultural subsidies were high. Given that not all trade-distorting support was included in the commitment and that support in the reference period was already high, the domestic support reductions following the URAA have been disappointing and done little to open markets to more agricultural trade. The current WTO negotiations under the so-called Doha Development Agenda have not yet succeeded in pushing this agenda much further because major players like the European Union (EU) and the United States hesitate to make concessions. But such concessions are important for regaining momentum in the negotiations. Developing countries represented by Brazil, China, India, and Malaysia, among others, hold the entire negotiations in a deadlock while they wait for the EU and the United States to present proposals for serious liberalization of agriculture.

A point often ignored in the international trade debate is that agricultural policy is deeply integrated into the domestic policy-making process. Agricultural policy is founded on a long series of historical events and conditional economic and political structures and institutions, which vary across countries. Despite external reform pressure from GATT/WTO and bilateral trade partners and internal reform pressure from increasing budget costs, high levels of overall agricultural support persist in the EU and the United States. Even though reforms have occurred and support has shifted toward decoupled, and hence non-trade-distorting, approaches, from a multilateral perspective these reforms are not enough. From a domestic perspective the results are more unclear. Overall, free trade improves the welfare of society, but some agents, like farmers and agribusinesses, also bear costs. These costs are large per agent compared with the average agent's gain. Together, these issues spill over into the policy-making process. At the end of the day, these costs create serious lobby pressure from farm interest groups, which make it difficult for the EU and the United States to promise serious liberalization of their agricultural protectionism.

Taking into account the relatively slow agricultural policy reform process in the EU and the United States, your assignment is to consider and reformulate the WTO legislation on domestic agricultural support. The proposal must be written in terms of both the overall WTO objective of trade liberalization and the domestic policy-making process.

Background

Introduction

Multilateral negotiations in the current Doha Development Agenda (DDA) under the WTO have run into serious problems. With the emphasis on development since the 2001 launch of the DDA, agriculture has been one of the most sensitive topics on the agenda. Developing countries, led by nations like Brazil, China, India, and Malaysia, have been persistent in calling for reduced agricultural protectionism in industrialized countries. For

developing countries, agriculture is crucial for economic growth and development. Agricultural liberalization is therefore essential for the success of the multilateral approach.

Negotiations on agricultural trade liberalization fall into three categories: domestic support, market access, and export competition. Both market access and export competition are typical GATT/ WTO issues. Domestic agricultural support is a relatively new issue that has gained serious attention in recent years. In 2004 US$279,527 million were spent on agricultural producer subsidies in the countries of the Organization for Economic Cooperation and Development (OECD). This amount equals 30 percent of the total value of agricultural production in OECD countries (OECD 2006). Major players on the world market, like the EU and the United States, are giving substantial shares of this support to their farmers.

The decision to support agriculture is based mainly on domestic conditions. Domestic producer subsidies can, however, distort international markets when the subsidies influence farmers' choices of output and output level. Specifically, some types of subsidies give farmers an incentive to produce more than they would without subsidies. In this case, subsidies are said to be coupled to production—the more a farmer produces, the more support he or she receives. This kind of domestic support leads to increased agricultural production and accordingly an increased supply of agricultural products on both domestic and world markets. This overproduction places downward pressure on world market prices. Domestic support can thus be trade distorting and is therefore an issue for discussion in WTO negotiations.

Not all types of domestic subsidies are equally trade distorting. Decoupled subsidies tend to have a smaller effect on production levels and consequently on world market prices. An example of a decoupled subsidy would be a fixed yearly payment to the farmer, given regardless of what and how much he or she produces. A solution to the domestic support problem might therefore be to switch entirely to decoupled subsidies. It is not clear, however, whether this solution is politically feasible (and desirable). Many actors have a say in this issue, and many interests must be considered at both the domestic and the international level. This case study provides an analysis of this set of problems and the core stakeholders in the political decision-making process.

A Theoretical Perspective on Decoupling: The Economic Rationale

Perceptions on the decoupling of agricultural subsidies are as varied as decoupling mechanisms. In order to discuss the economic rationale for decoupling, it is necessary to clarify the definition of decoupling in strict economic terms. Based on the work of Rausser and Foster (1987), Cahill (1997) was one of the first to provide a clear, simple definition: an agricultural subsidy is fully decoupled if the payment does not influence the production decisions of farmers who receive payments and if the payment allows free market determination of prices. In other words, the subsidy must not change the demand and supply curves. The OECD (2001) operates with a looser definition of decoupling, called effective full decoupling, which is more applicable in practice. Effective full decoupling requires that the production level with support not be larger than the production level without support, as long as the market is in equilibrium. The response to exogenous shocks to the economy does not have to be identical to a zero subsidy response; hence the slope of the demand and supply curves can be different from a situation without subsidies.

From an economic point of view, effective full decoupling of subsidies is the ideal way to support agricultural production because such subsidies will not distort agricultural production and agricultural markets. As mentioned earlier, elimination of production distortions that come from domestic support gives equal terms of competition between countries on the world agricultural market.[1] In many developed countries, coupled agricultural subsidies elicit overproduction. Overproduction leads to excess supply on the world market and hence to downward pressure on the world market price. A low world market price creates a competitive disadvantage for countries that do not subsidize agricultural production, and the agricultural commodities will not necessarily be produced where the comparative advantage is the greatest.

Swinbank and Tranter (2004, 171) noted that the main economic benefit of decoupling in the European Union is that it "gives greater freedom

[1] Leveling the playing field in principle includes eliminating tariff barriers and export subsidies. If these are not eliminated, one can say only that elimination of production distortions due to domestic support will give *more* equal terms of competition on the world market.

to farm, thereby potentially reducing their [the farmers'] costs and increasing their profits. For the economy as a whole this means an increase in welfare, as agricultural output is produced at lower cost." This argument coincides with the previous ones but focuses on domestic considerations. Decoupling gives the single farmer the freedom to produce the commodities that are the most profitable in real terms and not in terms of which commodities are subsidized the most. When farm production follows patterns of comparative advantage, it is likely to reach the highest level of productivity at the lowest cost possible. This scenario is possible under a decoupled support regime, but it will not necessarily happen under a coupled support regime.

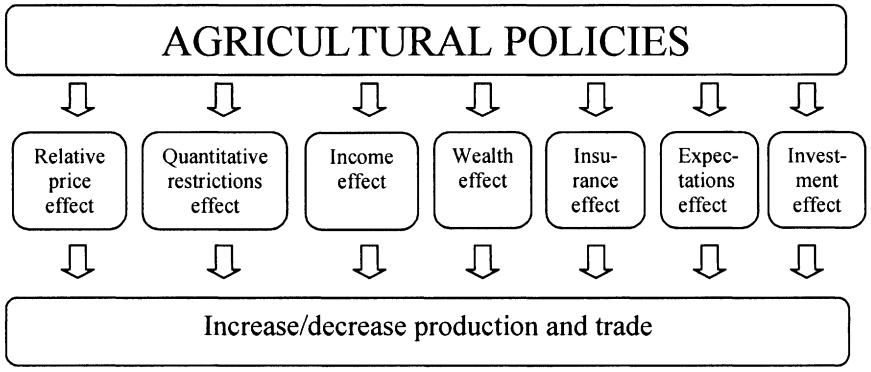
Whether a fully decoupled support instrument exists in practice is a point of discussion, for two reasons. First, decoupled agricultural subsidies have until now not been implemented as a sole instrument anywhere. In the EU and the United States, decoupled instruments have been introduced as a part of a policy package in combination with more coupled instruments. In such policy packages of coupled and decoupled policy instruments, it is difficult to identify influences attributed specifically to decoupled instruments, especially in instances where such instruments widen cross-commodity effects. As emphasized by OECD (2001) and Gohin et al. (2000), it is generally important to analyze the impact of a whole policy package and not just a single instrument.

Even though most of the decoupled subsidies introduced so far would have no effect on production from a marginal optimization point of view, some additional effects can still potentially affect the supply response of the single farmer. These effects occur because of the farmers' attitudes toward risk, wealth, and investment and also the farmers' expectations about future agricultural policies (OECD 2001).

These effects are outlined in Figure 1. The relative price effect, the quantitative restrictions effect, and the income effect can be analyzed in a static world (a world without time, risk, and uncertainty). If risk is included in the analysis, one can also observe wealth and insurance effects, and when time is introduced, one can analyze expectations and investment behavior in the long run. The workings of some effects are rather complicated, and note that the descriptions that follow here are simplified. Readers interested in more detail are referred to OECD (2001) and OECD (2005b).

The relative price effect works across different agricultural commodities. If one commodity is supported more than other commodities, the more-supported commodity's price is relatively higher than the prices of other commodities. This price difference can create a bias toward producing this commodity instead of other commodities. The relative price effect thereby indirectly reduces the production of commodities that are less supported (to the extent that they become relatively less profitable to produce). In principle, decoupled subsidies do not have any relative price effects because the farmer receives the subsidy regardless of what and how much is produced. If decoupling is not applied to all supported commodities, however, relative price effects can still exist.

Figure 1: Coupling Effects



Source: Inspired by OECD 2001.

If agricultural support programs put quantitative restrictions on output or input use, these restrictions directly affect the level of production. Examples of such restrictions could be milk quotas and land set-aside requirements. Restrictions have often been used to reduce the effect of increased production created by coupled subsidies.

The income effect basically shows that farmers' income level influences their choice of production level. If agricultural markets work perfectly and farmers are rational, they will produce the output that maximizes profits. Coupled subsidies marginally affect farm profits, and farmers will choose to produce more than without the subsidies. Decoupled subsidies do not affect farmers' profits marginally and therefore do not affect production size. In practice, however, the agricultural labor market and the market for agricultural production factors often do not work perfectly. In these cases increased income from decoupled subsidies tends to keep farmers and production factors employed above optimal levels.

Increased income from decoupled subsidies also increases farmers' wealth. In a world of risk and uncertainty, this result potentially creates a wealth effect. Most farmers are risk averse, and several studies show that farmers often have decreasing absolute risk aversion (DARA). DARA implies that richer farmers tend to accept more risk and to produce more than less wealthy farmers (Hennessy 1998). Therefore the wealth effect reflects the change in production elicited by subsidy-augmented wealth. Decoupled subsidies have wealth effects as well.

The insurance effect arises from the influence of agricultural subsidies on the risk level associated with agricultural production. Most agricultural subsidies stabilize or secure a certain level of agricultural income to reduce the risk of production (Hennessy 1998). Subsidies that stabilize income (such as disaster payments) generate the largest insurance effect. Since most decoupled subsidies only ensure higher income levels without stabilizing such income, the subsidy-induced insurance effects are limited (OECD 2005a).

An expectations effect plays a role in the long run. Farmers' expectations of future agricultural support can affect their production decisions. A farmer who receives decoupled payments and expects that these same payments will continue for the next 10 years will think and act differently from a farmer who expects a reduction of the decoupled subsidies over the same period. Expectations are difficult to measure empirically, and hence the literature lacks estimates of these effects (OECD 2004b).

Lastly, an investment effect exists to the extent that higher income, due to agricultural subsidies, leads to larger investments in agricultural production factors and in turn elicits higher agricultural production. Whether or not the investment decision is affected by agricultural subsidies depends on whether the amount of agricultural subsidies received changes owing to the investment. If farmers receive decoupled subsidies, their investment decisions will not be affected unless some of the previously mentioned effects would also lead to increased investments. If farmers borrow money to make investments, their receipt of agricultural subsidies also enhances their credit ratings (OECD 2005a).

Researchers have thoroughly investigated some of the coupling effects using different modeling approaches, and also more empirically in the case of the United States. Because of lack of adequate data on the implementation of the 2003 reform of the EU's Common Agricultural Policy (CAP), empirical estimates from the EU vary in magnitude and quality, giving ambiguous results for the effects of decoupled support. Even though some production effects are likely unavoidable, decoupled support instruments do appear, however, to generate milder effects than coupled instruments.

Following Cahill (1997), researchers started to measure the production effect of support instruments by the degree of decoupling. Degree of decoupling relies on the assumption that a support instrument is fully coupled to production (gives the maximum production effect) if it consists of price support, and it is fully decoupled if it has zero effect on production. On an index ranging between zero and one, a degree of decoupling of zero indicates a fully coupled subsidy and a degree of one indicates an effective fully decoupled subsidy. The degree of decoupling can be derived by dividing the production effect of the support instrument $\Delta Q(subsidy)$ by the production effect of an equivalent price increase $\Delta Q(price)$ and subtracting it from one (OECD 2001).

$$\text{Degree of decoupling} = 1 - \frac{\Delta Q(subsidy)}{\Delta Q(price)}$$

The degree of decoupling can exceed unity, suggesting a negative subsidy-induced production effect. It is a rather simplified way of measuring the degree of decoupling since measuring the degree of decoupling for single instruments is questionable. As noted earlier, the effect of a whole policy package is important and far more complicated.

Some of the subsidies used in the EU and the United States can be placed on the degree of decoupling scale approximately as shown in Figure 2.

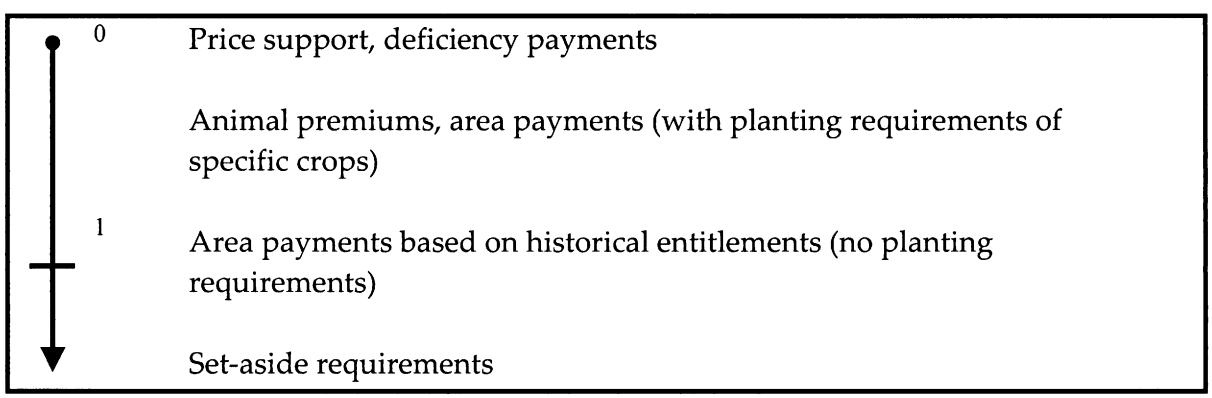
Set-aside requirements are not agricultural subsidies, but they are worth mentioning because they are often closely linked to agricultural subsidies. Introduced separately, they are likely to elicit a negative production impact. Likewise, subsidizing one commodity can have a negative production effect on other commodities (cross-commodity effect) (OECD 2003). Area payments based on historical entitlements are the type of payments introduced with the Single Payment Scheme in EU, which is described later. Because these payments are broadly defined as decoupled payments, they are currently permitted by the WTO. Animal premiums and area payments with planting requirements are generally considered partially decoupled subsidies. They are not completely independent of production level because the payments are on a per planted hectare basis. They are also, however, not completely dependent on production levels because farmers will achieve no gain in subsidies by maximizing yields. Price support is generally considered the most coupled agricultural subsidy because the farmer is subsidized for the entire amount of the commodity produced through a higher price. Price support tends to induce overproduction because higher production generates larger subsidy payments. The same mechanism exists with the U.S. deficiency payments.

When agricultural subsidies are decoupled, the distortions and inefficiencies in producer and consumer markets are eliminated—this is the economic rationale for decoupling. It is probably not possible, however, to construct the ideal decoupled subsidy in reality because a range of coupling effects tend to influence farmers' choice of production. Yet decoupled subsidies have a much smaller production impact than more coupled subsidies, and from an economic point of view, decoupled subsidies appear preferable.

Producer Subsidies and Decoupling in the European Union

For many years, the core element of the CAP has been price support. To secure food supplies and farm income, a customs union was created in the late 1950s to facilitate free agricultural trade between the member states. All products were governed by individual market organizations with a set of institutional prices and an intervention mechanism that secured an artificially high European market price. As already described, price support generates a zero-value degree of decoupling and is therefore potentially very production distorting and trade distorting.

Figure 2: Different Agricultural Subsidies Placed Loosely on a Degree of Decoupling Scale



Source: Based on authors' evaluation of OECD 2001.

During the 1970s and 1980s, increasing problems occurred. The EU budget swelled as high prices led to overproduction. Budget outlays went to market intervention and export subsidies. During the 1980s the EU tried several steps to limit overproduction, such as by introducing quotas on milk and sugar. Overall overproduction continued, however, and pressure to reform the CAP emerged both from inside the EU and from the outside world in the GATT trade liberalization negotiations.

This internal and external pressure to reform the CAP also brought about the conclusion of the MacSharry Reform in 1992. The reform reduced price support to a wide range of agricultural products. As a compensation for the lower prices, hectare and animal premiums were introduced. Hectare premiums were paid for agricultural land planted to certain crops. They vary each year according to the size of the subsidy-entitled land. The hectare premium is not directly coupled to the level of production, but it can only be paid to land that is under cultivation. In the late 1990s the MacSharry Reform was deepened with the Agenda 2000 Reform (European Commission 1999). Price support was further reduced, and producers were compensated with a rise in the size of hectare and animal premiums. On a degree of decoupling scale, the support that was converted to hectare and animal premiums has a higher degree of decoupling than does price support and should therefore be less production and trade distorting.

Current WTO negotiations began in 2001, and a future agreement will potentially put new demands on domestic support. Also the expansion of the EU from 15 to 25 countries increased internal EU demands to rethink the CAP. In 2002 Agricultural Commissioner Franz Fischler revealed an entirely new CAP reform proposal as a part of the midterm review of Agenda 2000. Even though some member countries were highly critical of the proposal, in July 2003 they agreed on a compromise, which was implemented in January 2005 (Council Regulation (EC) no. 1782/2003).[2] Part of EU agricultural support is now given as a decoupled subsidy called the Single Payment Scheme. The Single Payment Scheme broadly covers cereals, durum wheat, rice, potato starch, dried fodder, and cattle. Since 2005, reforms of EU sugar and oilseed policy have followed the same line of change.

The Single Payment Scheme sets farmer subsidies at the same amount annually regardless of production. The decoupled payments require that farmers comply with a range of requirements on good agricultural and environmental conditions and other statuary management requirements. Collectively, these requirements are called Cross Compliance. The implementation of the Single Payment Scheme varies noticeably across the member countries, because different implementation options were possible. Therefore the CAP has become far more complex than previously.

Figure 3 illustrates the composition of EU support from 1986 to 2005. Price support clearly dominated until the MacSharry Reform in 1992. Thereafter other coupled subsidies, specifically hectare and animal premiums, gradually increased, and by 2005 a noticeable share of these subsidies were converted to decoupled support under the Single Payment Scheme. Results of the sugar reform are not discernible until 2006, and in some countries the Single Payment Scheme has not been fully implemented yet. Figure 3 shows that although the latest CAP reform introduced substantial changes, coupled subsidies and price support continue to make up the principle component of EU farm subsidies. Only part of the support has been changed to less distorting forms.

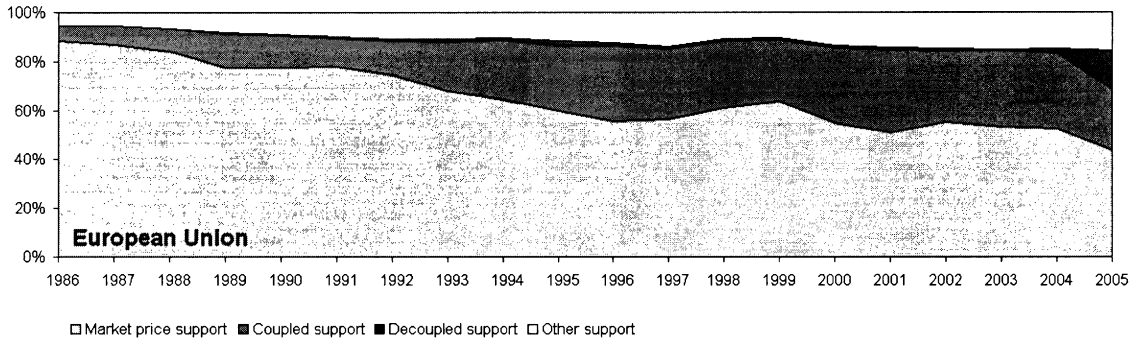
The EU is still far from having a completely decoupled farm subsidy scenario. On the other hand, the agricultural policy changes so far are in line with WTO requirements for domestic support. Price support has been reduced, and most of the hectare and animal premiums have been changed into decoupled payments, which are allowed under the WTO (Jensen and Zobbe 2006).

Producer Subsidies and Decoupling in the United States

Since the first farm support program in 1933, the overall objective of government intervention in agriculture has been income protection for U.S. farmers. Current agricultural policy in the United States is governed by the Farm Security and Rural Investment Act of 2002. Three of the 2002 Farm Bill's instruments relate to commodity subsidies: loan rate programs, decoupled direct payments,

[2] Council Regulation (EC) no. 1782/2003 of September 29, 2003, established common rules for direct support schemes under the Common Agricultural Policy, established certain support schemes for farmers, and amended regulations.

Figure 3: Composition of Support Given to EU Agricultural Producers, 1986–2005



Source: OECD 2006.

Note: The categories of support are from the standard OECD producer support estimate categories as follows: Market price support = market price support. Coupled support = payments based on output + payments based on area planted. Decoupled support = payments based on historical entitlements.

Other support = payments based on input use + payments based on input constraints + payments based on overall farming income + miscellaneous payments. The category "other support" contains much support given on environmental and other objectives, and the coupling effect of these subsidies is not always clear.

and countercyclical payments. The most commonly used type of loan rate is the loan deficiency payment, which is a product-specific minimum price that will secure farmers' income in case of collapsing world market prices. The loan rate size is governed by provisions in the 2002 Farm Bill. If the loan rate is higher than the world market price, the farmer will be compensated for his loss. The decoupled direct payment is a non-product-specific payment to each farmer every year based on historical production and income. The central mechanism in the countercyclical payments is the target price. This price is fixed in the legislation, and it constitutes a desirable level of income. The government pays the producer the difference between the target price and the higher of the 12-month-average market price or the loan rate plus the per-unit direct payment. This countercyclical payment is non-product-specific and based on historical production data (Knutson et al. 2004). To sum up, in a good year farmers receive only direct payments, and in a bad year they can receive all three types of support.

The current 2002 Farm Bill has evolved from an array of successive farm bills. Historically, U.S. farm policy has gone through three phases. First, full-scale government intervention in agriculture was introduced as a major part of the New Deal legislation stemming from the farm crisis of the 1920s and early 1930s, when farm prices and income fell relative to nonfarm prices and income. The policy mix introduced through the Agricultural Adjustment Act of 1933 included supply controls combined with price support, loan rate programs, and direct payments. Because of the very detailed supply control, a nationwide administration was set up to enforce and control the legislation.

Second, following a social welfare debate in the 1960s, the composition of large shares of producer support changed radically from price support to deficiency payments. This change became manifested in the 1973 Farm Bill. The debate in the 1960s had dealt with two issues. One problem was the lack of flexibility in the support system. The traditional fixed price support failed to reflect changes in world market prices, and in turn implied unchanged consumption levels. The other issue related to a social-ethical problem: because poor consumers spend relatively more of their income on food than wealthy consumers do, they are more affected by the burdens of price support.

The third phase is the fundamental shift in the philosophy of agricultural intervention that took place in 1996. The 1996 Farm Bill, titled the Federal Agriculture Improvement and Reform Act, abolished supply controls, decreased the loan rates,

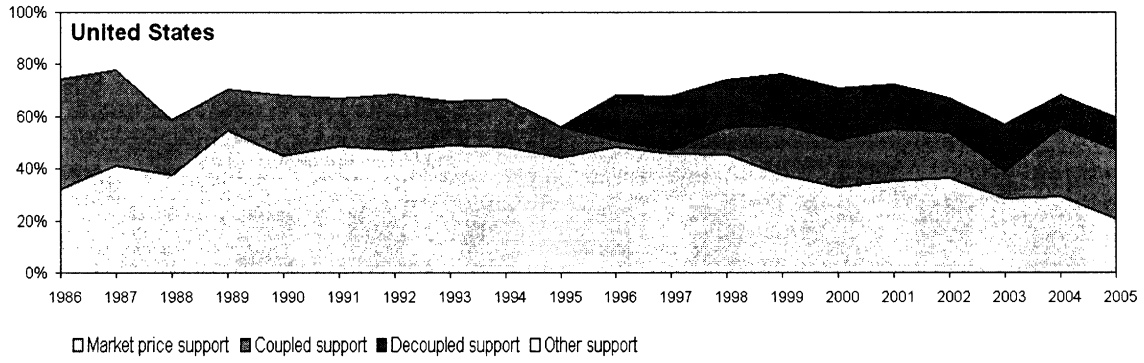
and moved the bulk of producer support from deficiency payments to decoupled direct payments.

Decoupling is not a new issue in farm policy in the United States. The concept of coupled and decoupled support was discussed surrounding the Agricultural Adjustment Act of 1933 (Nourse et al. 1937). Furthermore, decoupling was a subject of debate in discussions surrounding the 1947, 1973, and 1985 farm bills, but at the end of the day, the political will to decouple support was not there. In 1996 the Congress and the Clinton Administration did what previous sessions could not agree upon. The traditional coupled deficiency payments were changed into decoupled payments based on historical data on production and income.

To examine this change, it is important to look at the political system. Historically, political ideology and economic principles have tended to collide. Since President Franklin D. Roosevelt launched the New Deal in 1933, the Democrats have generally favored supply control and tended to promote coupled support. The Republicans, on the other hand, never really liked the idea of a state agency that controlled overall farm production. This is by no means to say that Republicans are against farm support, but they tend to favor more decoupled policy instruments that allow the market to play a larger role in agricultural production. According to Paarlberg and Orden (1996), the midterm election of 1994 explains a major part of the policy change in 1996. In that election the Republicans gained control of both chambers in Congress. Until then, the Democrats had controlled at least one of the two chambers since 1955. This new situation, together with a globalization-friendly president in the White House and high commodity prices, helped pave the way for the 1996 Farm Bill.

The current 2002 Farm Bill succeeded the 1996 Farm Bill and must be evaluated as an adjustment of the previous act. With regard to decoupling, one issue in the 2002 Farm Bill has overshadowed other issues. The 2002 legislation allowed farmers to update their area base data stated in the 1996 legislation. This provision was problematic because it creates a link between current production and future producer subsidies, hence coupling support and production decisions. The reason for this provision lies in biotechnical research. New research had extended the growing area for corn and soybeans north to North and South Dakota, where decoupled payments were being calculated based on their historical grain crops. Allowing the farmers to update their base data was seen as a way of securing a fair distribution of support between all U.S. farmers. The composition of U.S. support from 1986 to 2005 is shown in Figure 4. The bulk of support is still given as coupled support, and in fact only a fraction is decoupled.

Figure 4: Composition of Support Given to U.S. Agricultural Producers, 1986–2005



Source: OECD 2006.

Note: The categories of support are from the standard OECD PSE categories as follows: Market price support = market price support. Coupled support = payments based on output + payments based on area planted – disaster payments. Decoupled support = payments based on historical entitlements. Other support = payments based on input use + payments based on input constraints + payments based on overall farming income + miscellaneous payments. The category "other support" contains much support given for environmental and other objectives, and the coupling effect of these subsidies is not always clear.

Policy Issues

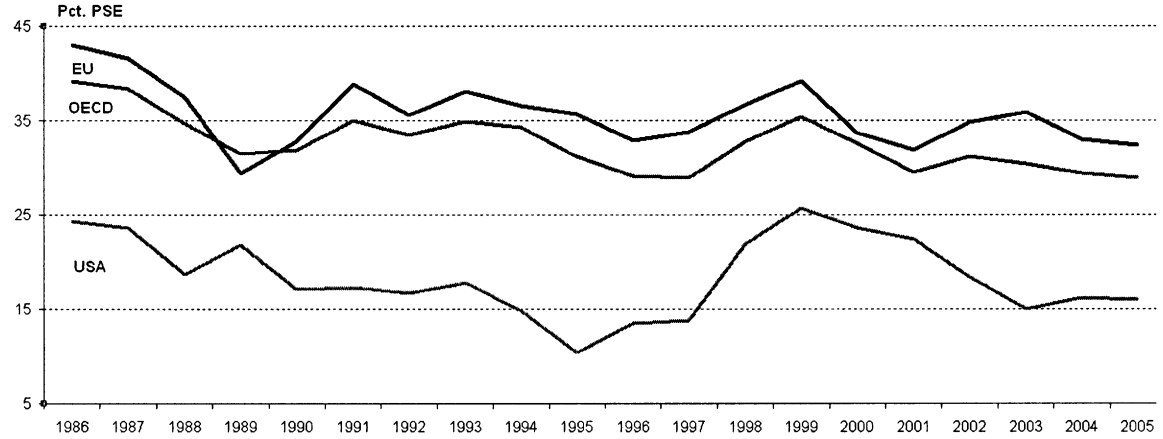
From an overall welfare economic point of view, the first best solution would be to restrict the government's role in agriculture to correcting market failures. This approach would secure the most optimal allocation of the factors of production. If government, for some reason, is unsatisfied with the income distribution generated through the marketplace and wants to redistribute income to the farmers, the first best solution would be cost-free lump-sum transfers. In effect this solution would mean historically based, decoupled payments with minimal influence on production and hence trade. In practice the international and domestic discussion on agricultural subsidies is more complicated, and the economic agenda is difficult to adopt.

International Policy Issues

The international focus on agricultural subsidies dates back to 1982, when the OECD adopted the so-called trade mandate. The aim was to analyze the possibilities for gradually reducing agricultural protectionism and for including agriculture in the multilateral trade system. A framework was established to analyze agricultural policy and the impact on international trade. In 1986 the OECD began to measure agricultural support in member countries. The measure used is called producer support estimate (PSE) and is basically a monetary estimate for the support transferred to producers. Figure 5 reports PSE as a percentage of the value of agricultural production for the European Union, the United States, and the OECD. After years of work, the OECD report *National Policies and Agricultural Trade* was released in 1987. It served as a key input to the Uruguay Round negotiations (1986–1993) under GATT (Coleman and Chiasson 2002). This was the beginning of a new agenda in international agricultural policy and of an institutional development whose effects we still observe today.

The URAA established the disciplinary framework for domestic agricultural support in GATT/WTO member countries by categorizing support into three boxes: an amber box with trade-distorting support; a blue box with production-coupled support combined with production-constraining programs; and a green box with decoupled support programs. The URAA introduced reduction commitments on the amount of domestic support allowed in the amber box, while assistance in the blue and green boxes was exempt from reduction commitments. In the amber box, an aggregate measurement of support (AMS) was defined as an indicator of the amount of trade-distorting support. The developed countries agreed on a 20 percent reduction commitment on the total AMS (and the developing countries agreed on 13 percent) in the URAA from an initial historical base of domestic support. The reduction commitments on the most distorting subsidies in the amber box have, so far, not been so tight that any member country has reached the binding limit. In principle, all production-coupled support should have been cut, but because of the exemption of the blue box and a historical base period reflecting high initial support levels, cuts to domestic support following the URAA have been rather disappointing.

Figure 5: Share of PSEs in Total Value of Production, 1986–2005



Source: OECD 2006.

Green box subsidies are defined in the WTO context as decoupled subsidies. They are considered to be minimally production- and trade-distorting, and these policies are generally permitted. The WTO guidelines for classifying policies into the green box concern primarily policy design rather than directly specifying the level of production and trade distortion allowed (Frandsen et al. 2002). The definition listed in Annex 2, Article 5 of the URAA is as follows:

Decoupled income support

(a) Eligibility for such payments shall be determined by clearly defined criteria such as income, status as a producer or landowner, factor use, or production level in a defined and fixed base period.

(b) The amount of such payments in any given year shall not be related to, or based on, the type or volume of production (including livestock units) undertaken by the producer in any year after the base period.

(c) The amount of such payments in any given year shall not be related to, or based on, the prices, domestic or international, applying to any production undertaken in any year after the base period.

(d) The amount of such payments in any given year shall not be related to, or based on, the factors of production employed in any year after the base period.

(e) No production shall be required in order to receive such payments.

The policy design requirements only allow subsidy types with very modest effects on production and trade. There will be no direct link between support and production size, and these types of subsidies will typically be in the high end of the degree of decoupling scale. In both the EU and the United States, substantial changes in agricultural policy have taken place since the conclusion of the URAA. One of the drivers of these reforms has been the international debate on liberalizing world trade.

Domestic Policy Issues

Arguments for decoupling producer subsidies are more straightforward in an international context than in a domestic one. In many OECD countries, including the EU and the United States, agricultural policy is part of domestic redistributive economic policy. Historically, agricultural support was undertaken because of the so-called farm income problem, which states that farm income is more unstable and decreases relative to nonfarm income over time (Gardner 1992). Today the rationale for the subsidies is far more blurred. It is probably a combination of the farm income problem and a fear of what would happen if the subsidies were truly decoupled or removed. Decoupling could result in financial stress partly because the subsidies have been capitalized in the land values and the values of other production factors and partly because it could potentially lead to large changes in the location of agricultural production through a market-based specialization and division of labor.

From a government point of view three issues are of concern when agricultural policy issues are dealt with. After a decision to support farmers' income is made, the first issue is the choice of policy instrument. Although various instruments can be chosen, we focus on three: price support, deficiency payments, and direct decoupled payments. Each instrument has various characteristics and efficiency levels. Their only common characteristic is that they transfer money from society to farmers. The transfer efficiency is determined by transfer loss such as distortion costs and transaction costs (OECD 1995).

Price support is mainly paid by the consumers through an artificially high price. This high price provides support for the farmers and gives them incentives to increase production. To be effective, price support is often combined with an intervention mechanism to stabilize the price and with tariffs to protect domestic farmers from world market competition. If a country is a net importer, this approach results in national tariff revenue, and if the country is a net exporter, it results in export subsidies paid by the taxpayers. Administratively, a price support is easy and cheap to operate because it can be managed through the food-processing industry.

Deficiency payments are paid by taxpayers. The farmers plan their production on the basis of a politically defined target price. This higher price

gives farmers an incentive to increase production. If the country is a net exporter, the deficiency payment in principle works as an open-ended export subsidy as well. The operation of a deficiency payment scheme depends heavily on administrative control. Every farmer needs to be taken into account because the level of support depends on the actual harvest, and this implies high administrative costs.

In theory, direct decoupled payments have no influence on production. Direct decoupled payments are taxpayer financed, but because of the nature of direct decoupled payments, the cost of administering such a scheme is smaller than for the deficiency payments. Once direct decoupled payments are calculated, the same amount of support is paid to each farmer annually.

The initial choice of policy instrument or policy mix is fundamental in the long run because history has shown that in this area there is a high degree of path dependency. The choice is based on issues like the objective of the policy, administration skills, ideology, structure of the agricultural sector, and openness of the economy.

When producer subsidies are implemented, everything is not equal. After the choice of policy instrument, the second relevant issue is the trade-off between farm support policy and other economic policies. The most obvious is fiscal policy because of the costs of subsidies. If farm subsidies increase there are two approaches to cost: the budget can be increased, or other costs can be decreased. Agricultural policy also spills over into other policy areas, which must be considered. These areas include rural development policy, environmental policy, labor policy, tax policy, social policy, foreign policy, aid policy, and trade policy. How these areas are handled comes down to governments' preferences about which policy areas should have the greatest weight. In both the EU and the United States, agricultural producer subsidies appear to be ranked extremely high.

The third and likely the most important issue concerns navigating the unstable waters of the political decision-making process. U.S. agricultural policy evolves from a consensus between the White House and Congress. Traditionally Congress (the Senate and the House of Representatives) have had the initiative in this matter. In the United States there also exists a very tight relationship between the civil servants in the U.S. Department of Agriculture (USDA), the politicians in the two congressional committees on agriculture, and the leaders of the national farm organizations. This relationship is often referred to as the "Iron Triangle" and can be found in many nonfarm policy areas as well. In farm policy, this triangle is influential for two reasons. The practice of electing two senators from each state grants a relatively high degree of political power to the agricultural states of the Midwest and the South. The result is a powerful Senate agricultural committee whose influence goes far beyond farm policy. The other reason for the successful Iron Triangle is related to the historical ties between the USDA and the agricultural sector, which go back to the 1860s. The New Deal and the creation of the Agricultural Adjustment Administration in 1933 strengthened these ties even more through the build-up of local branches across rural America. The details of supply control administration ensured a tight relationship between farmers and civil servants.

In the EU, agricultural policy is made through a complicated decision-making system that consists of the Council of Ministers, the European Commission, the European Parliament, and various interest groups. The Council of Agricultural Ministers deals with the Common Agricultural Policy (CAP). All member countries are represented on the council, and their attitudes toward the CAP reflect national interests. Behind every minister there exists a sovereign country with a separate political decision-making system. Because of the CAP's status as a supranational policy, there is a voting procedure that both respects the rights of the majority and protects the rights of the minority. The Council of Agricultural Ministers, however, has traditionally stressed consensus. The European Commission is the government of Europe, and on CAP issues it has the initiative. In practice, this means that the Commissioner of Agriculture prepares and presents proposals for the Council. If the Council opposes a proposal, it is up to the commissioner to navigate and repropose. The role of the European Parliament with regard to CAP is to either adopt or reject the total budget for the European Union.

Historically the farmers of Europe have had a great interest in the CAP and have exercised their interests through COPA (Committee of Professional Agricultural Organisations in the European Union), an organization made up representatives of national farm organizations in the EU. COPA has both formal and informal influence on the decision-making process. Over the years, other interest

groups in the areas of consumer rights, environmental protection, and developing countries' rights also have shown interest in the CAP. Besides lobbying on a European level, farm and other groups also lobby on the member state level. The influence of the farm lobby on politicians varies across countries, but in member states like France, Greece, and Poland, among others, governments are highly influenced by farm conservatism, which of course spills over into European decision making.

Stakeholders

Many groups and institutions have interests in EU and U.S. domestic support policies. These interests vary widely and add to the complexity of domestic support policies. Trade partners can be divided into two groups—those who benefit and those who lose from EU and U.S. domestic support. Agricultural exporters like Australia and New Zealand have an interest in promoting support policies that do not distort trade. The fact that coupled agricultural subsidies create overproduction followed by excess world supply, lower world market prices, and lower import demand affects exporting countries negatively. Some developing countries, especially least-developed countries like those in Sub-Saharan Africa, have preferential access to the European and American markets. One example is the Everything but Arms (EBA) initiative launched by the EU. This initiative gives least-developed countries (LDCs) tariff- and quota-free access to high-price European markets with exceptions for a few goods.

The reduction of price support results in preference erosion for the LDCs with preferential access to European and U.S. markets. Countries with such preferences are therefore interested in keeping the status quo rather than changing the agricultural subsidies into less-distorting forms with no price effect on agricultural products.

As an international organization that works toward liberalizing world trade, the WTO is also a stakeholder in the issue of domestic agricultural support policies and their effects on world trade. Different interests are at stake on the international scene, and an unambiguous solution to the domestic support issue is not easy to find.

Domestically, price support is financed by consumers and taxpayers. The former group pays a higher price for agricultural products, and the latter group pays for price-supporting facilities like intervention mechanisms and export subsidies. Both coupled and decoupled direct support are financed by taxpayers. In the case of a large economy, deficiency payments can benefit the consumer because overproduction depresses prices on the world market. These groups of consumers and taxpayers are very heterogeneous. The amount of money transferred to farmers from a single consumer or taxpayer is relatively marginal. Many consumers are not aware that they support farmers though food prices. Therefore substantial consumer opposition to agricultural subsidies is relatively unlikely. Consumer interest groups exist, but they are most often focused on other specific issues like food safety and environment.

The farm interest groups have much stronger interests at stake, both nationally and internationally. The degree of influence that farm lobbies exercise on farm policy formation varies across countries. Farmers often view decoupled payments as social welfare payments to which they are generally averse. Farmers are also aware that direct subsidies are much more visible to the public. Whereas consumers may hardly notice higher food prices, direct subsidies are much easier to quantify when they are visible as huge expenses on the common European Union budget and on the federal budget of the United States. This visibility makes it easier for both politicians and interest groups to target them and demand reductions. Farm interest groups often receive support in lobbying for coupled support by the upstream and downstream industries. The capitalization effects of support also affect agribusiness, and future liberalization of support could create financial stress in the short run and change demand and supply in the primary sector in the long run through serious structural adjustments.

As already mentioned, an increasing number of other interest groups are showing an interest in agricultural policy. Among these are environmental groups seeking to reduce agriculture's negative influence on environment, animal welfare groups focusing on agriculture's intensive use of animals, and groups focusing on rural development and on growth and rights of developing countries. All these groups have many issues at stake regarding agricultural policies and agricultural subsidies, complicating the process of reforming agricultural policies in the EU and the United States. A change toward using more decoupled subsidies is not as simple as it seems in theory.

Policy Options

Since the 1982 implementation of the OECD Trade Mandate and the inclusion of agriculture in multilateral trade negotiations in 1986, report after report has shown that liberalization of domestic agricultural policy, hence producer subsidies, should be a part of the solution. Under both the Uruguay Round (1986–1993) and the Doha Development Round (2001–?), discussions about disciplining and reducing domestic support have gained much attention in the international debate. Despite this attention from economists, politicians, and the media, the actual results are rather disappointing, as shown in Figures 3, 4, and 5. Some changes have occurred in the composition of the support, but a radical shift toward decoupled support is not discernible.

This slow progress despite the attention indicates a problem in multilateral trade negotiations. Four policy options can be identified. First, abolishing the consensus rule in WTO could change the dynamics of the negotiations and make reaching an agreement easier. Second, instead of centering on broad rounds, negotiations could focus on specific issues to be agreed upon separately. Sensitive issues could thus be avoided. Third, agreeing on the status quo would mean that there will be no more negotiations on domestic support. The Uruguay Round Agreement on Agriculture would then stand as permanent legislation. Fourth, instead of following the old agenda on domestic support in the WTO, a new one could be developed. These four policy options will be explored in more detail.

The first two options both relate to the organization of the WTO. The benefit of changing the consensus rule to some kind of voting procedure would be to abolish the de facto veto right of all member states. This approach would change the dynamics of negotiations because countries with inflexible positions on, for instance, domestic agricultural support, would lose influence. One of the problems would be to design a voting procedure. How would the weight attached to each country be decided? Should it be based on geographical size, population, GDP size, or trade volume, and what about the balance between developed countries and developing countries? Another even more serious problem could be that countries would leave the WTO for fear of losing control and sovereignty. Such an outcome could jeopardize all that both the GATT and WTO have achieved over the years.

The benefit of moving away from the concept of broad rounds of negotiation would be to concentrate all the administrative and technical expertise of the WTO and the member states on one issue at the time. A working agenda like this would allow the WTO to step out from the shadows of GATT and unfold its potential as an organization. A problem with this approach is that the whole idea of broad rounds allows for winners and losers for each topic discussed. The negotiation of many different topics at the same time increases the possibilities for trade-offs, and hence for reaching an agreement. The more fundamental problem with these first two policy options is that they will change the spirit and the overall atmosphere of the multilateral trade negotiations that have developed since 1948.

The third policy option is to abolish the negotiations on domestic agricultural support. The URAA would then stand as permanent legislation. The benefit of doing so would be to cut off negotiations on a politically sensitive area where progress is limited. Additionally, it would move focus to the other two areas of agricultural negotiation under the WTO: market access and export competition. According to a study by Anderson and Martin (2006), the potential benefits of trade liberalization in agriculture will come mainly through increased market access. This finding supports a shift in focus from domestic subsidies to market access. There are at least three problems with this policy option. First, the area of market access is by far the most sensitive area in agricultural negotiations, and at the end of the day a trade-promoting agreement would still be far away. Second, it is no coincidence that the negotiations on agriculture are divided into domestic support, market access, and export competition. The three areas are deeply linked. For example, domestic price support needs to be combined with strict border controls to be effective. Third, the URAA is far from a perfect agreement. One of its problems is that allowed producer subsidies are based on the average support given in 1986–1988, a period when the world market price was seriously depressed and consequently tariffs and agricultural subsidies were high. As a result, members like the European Union and the United States are left with rather flexible support commitments.

The discussion of the first three policy options leads to the fourth one. Domestic support is an important area of discussion in the WTO, but the slow progress in current negotiations indicates the

need for an adjustment of the agenda set by the URAA. This adjustment should incorporate existing knowledge from the URAA, knowledge about coupling and decoupling support on both a theoretical and a practical level, and knowledge about the domestic policy-making process.

Assignment

Taking into account the relatively slow agricultural policy reform progress in the European Union and the United States, your assignment is to consider and reformulate WTO legislation on domestic agricultural support. The proposal must be written in terms of both the overall WTO objective of trade liberalization and the domestic policy-making process.

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Chapter Eleven
U.S. Farm Policy Reforms: Domestic and International Implications (10-3)
by Fuzhi Cheng

Executive Summary

With the Doha Round of World Trade Organization (WTO) negotiations at a standstill, substantial liberalization of agricultural trade remains elusive. One obstacle to progress is that "dirty decoupling" of farm subsidies from production decisions in developed countries has discredited the constructive reform strategy of reducing the production- and trade-distorting effects of farm support programs. Border measures in the developed world, often put in place to accommodate domestic policies, are also problematic.

The United States has a long history of farm policy interventions. The omnibus multiyear farm bills provide extensive income and price support to farmers of major crops. Protective trade measures such as tariff rate quotas (TRQs) are widely used to supplement commodity support programs. U.S. agricultural policy affects a diverse group of stakeholders both within the United States and internationally. These stakeholders usually have very different and sometimes conflicting interests.

U.S. agricultural and trade policies have evolved in the past century in response both to the changes occurring in agriculture and the economy and to budgetary and trade pressures. Yet they have also retained many features dating back to the early 1930s. Critics have long argued that these policies are outdated and in many ways detrimental to U.S. domestic agriculture and to the world economy. There is substantial pressure for additional reforms to U.S. agricultural policy, even though the 2002 Farm Bill is not scheduled to expire until the end of 2007.

There are no clear rules for undertaking reform, however, and it remains uncertain exactly what the next farm bill would look like. This analysis provides some generic options for achieving further agricultural policy reform in the United States. Possible policy options are offered in three broad areas: domestic support, market access, and export subsidies. Although these trade and domestic policies are discussed separately, they should be treated as linked and requiring coordinated reform efforts.

There is also the issue of politically feasibility if any reform is to occur. To the extent that current domestic and trade policies prop up domestic prices and generate higher farm incomes, U.S. farmers and farm groups are loath to support a change. Nonetheless, several steps can be envisioned that would improve the prospects for adoption of reform in the United States. Effective mechanisms might include an elimination of the permanent legislation (to which the periodic farm bills are technically amendments) for farm support programs in the United States and a new WTO agreement on agriculture built on tighter limits on U.S. amber box measures as well as commitments to greater reductions in tariffs and export subsidies. Past experience suggests that a policy change will require substantial support from producers. For producers who are net losers, compensation will be necessary and should be made lucrative enough to bring about the necessary support.

Your assignment is to design a policy reform package (in terms of domestic support, market access, and export subsidies) that is both politically feasible in the United States and beneficial for developing countries.

Background

Overview

With the Doha Round of WTO negotiations at a standstill, substantial liberalization of agricultural trade remains elusive. One obstacle to progress is that "dirty decoupling" in developed countries has discredited the constructive reform strategy of reducing the production- and trade-distorting effects of farm support programs, just as "dirty tariffication" has marred the elimination of

qualitative trade restrictions in the Uruguay Round and left high levels of protection in place.[1] Decoupling of payments from production decisions is supposed to eliminate distorting policy effects. But whenever world prices are low, developed-country governments quickly step in and expand their payments to farm producers, making the claim that these payments are "decoupled"—that is, isolated from production decisions—rather suspicious.

Beyond subsidies, border measures in the developed world are also problematic. These border measures are often put in place to accommodate domestic policies. For example, when a government attempts to support the domestic price of an importable commodity at a level higher than the world market price, it must impose high tariff or nontariff barriers to keep foreign producers from flooding the market with products at lower world market prices and taking advantage of higher domestic prices. Or, if a government policy (like imposition of price floors) induces more production than can be accommodated on the domestic market, governments must subsidize exports onto world markets. In both cases, governments rely on border measures to shift the burden of adjustment from the domestic to the world market.

U.S. Farm Policy

The United States has a long history of farm policy interventions. The omnibus multiyear farm bills provide extensive income and price support to farmers of major crops. The current farm bill, the Farm Security and Rural Investment Act (FSRIA) of 2002 (or 2002 Farm Bill), which governs agricultural programs through 2007, was signed into law in May 2002.[2] Although the 2002 Farm Bill introduces some new policies to the array of agricultural commodity programs, in many ways it extends provisions of the 1996 farm bill and the ad hoc emergency spending bills of 1998–2001. For example, the 2002 Farm Bill continues marketing assistance loans, which existed under previous U.S. farm law. Production flexibility contract (PFC) payments of the 1996 farm bill are replaced by direct payments. A new countercyclical payment is established to provide an improved farm income safety net for major crop producers. As in the previous farm bills, the heart of the 2002 bill lies in commodity support programs. In addition, the bill contains provisions on agricultural trade, rural development, domestic food assistance, foreign food aid, conservation, crop insurance, farm credit, forestry, and agricultural research.

The commodity support programs affect producers of a wide variety of agricultural commodities. The program-covered commodities include wheat, feed grains (corn, sorghum, barley, oats), cotton (upland and extra-long staple [ELS]), rice, soybeans, other oilseeds (sunflower seed, canola, rapeseed, safflower, flaxseed, mustard seed), milk, peanuts, beet and cane sugar, wool, mohair, honey, dry peas, lentils, small chickpeas, and tobacco. Altogether, these commodities account for approximately 40 percent of all farm cash receipts (Becker and Womach 2002). Other commodities that normally receive no direct support include meats, hay, poultry, fruits, nuts, vegetables, and nursery/greenhouse products. But even producers of these items can be affected indirectly by the commodity programs. In addition, provisions in the law allow the U.S. Department of Agriculture (USDA) to provide discretionary direct subsidies to non-program commodities whenever deemed necessary.

The commodity programs in the 2002 bill are diverse, and the types and levels of statutory support employed vary by commodity. Some are supported by only one method; others receive their support through a combination of program tools. Broadly speaking, commodity program supports in 2002 Farm Bill can be classified into two major categories: farm income support and commodity price support. Farm income support programs make payments to farmers to supplement their

[1] "Dirty decoupling" and "dirty tariffication" refer to the situation where efforts to decouple subsidies from farmers' production decisions or to reduce nontariff barriers to trade have actually led to more production-contingent subsidies or higher tariff rates.

[2] Permanent legislation for farm support refers to those laws that would be in force to authorize various agricultural programs in the absence of all temporary amendments (farm bills). The Agricultural Adjustment Act of 1938 and the Agricultural Act of 1949, as subsequently amended, serve as the basic laws authorizing the major commodity programs. Technically, each new short-term farm bill amends the permanent legislation for a specified period. The permanent statutory provisions, as amended over the years, dictate how commodity programs can be implemented unless steps are taken to amend, suspend, or repeal parts of them. The most recent legislation modifying the effect of the permanent provisions through such actions was the 2002 Farm Bill. As usual, some permanent provisions were left unchanged by the 2002 Farm Bill and therefore still apply to current programs.

income without directly supporting commodity marketing prices. In the 2002 Farm Bill, this type of support includes annual fixed decoupled payments (direct payments) and countercyclical deficiency payments for grains, cotton, oilseeds, and peanuts; countercyclical deficiency payments for milk; and nonrecourse marketing loans gains (MLGs) and loan deficiency payments (LDPs) for grains, cotton, peanuts, oilseeds, wool, mohair, honey, dry peas, lentils, and small chickpeas. Commodity price support programs affect the price of commodities directly by setting minimum prices, restricting production or sales, and/or regulating imports. In the current farm bill, price support programs affect four commodities: peanuts and tobacco by marketing quotas (which were bought out in 2004),[3] sugar by marketing allotments and import quotas, and milk by surplus purchases.

Farm Program Payments

Subsidy payments to farmers vary across years because many program benefits are contingent on market prices (all in nominal terms). Figure 1 shows commodity and conservation program payments from 1996 to 2006. Total payments to farmers have increased since 1998, reaching a record US$23 billion in calendar year 2005. These payments were forecast to decline, however, to about US$18 billion in calendar year 2006 as prices were expected to slightly recover. Under the 1996 Act, PFC payments decreased according to a payment schedule for major field crops, from a high of US$6.4 billion in calendar 1997 to US$4 billion in calendar 2001. The 2002 Farm Bill replaced PFC payments with fixed direct payments. These payments, based on historic acreage and yields, are considered "decoupled"—that is, not based on current production or prices. Direct payments are projected at US$5.25 billion annually over the remainder of the 2002 Farm Bill.

Low commodity prices led to significant increases in LDPs and MLGs in 1998–2001 and again in 2004–05. The marketing assistance loan program, reauthorized in the 2002 Farm Bill, prevents the buildup of publicly owned stocks (major field crops) by providing alternatives to defaulting on commodity loans. LDPs and MLGs provide farmers with per-unit revenue insulation when prices are low. Ad hoc emergency assistance legislated in 1998–2001 also played a prominent role when prices were low during this period. Instead of seeking ad hoc legislation, the new countercyclical payments authorized in the 2002 Farm Bill offer a certain provision to help stabilize farm revenues. Countercyclical payments rose in 2005, again reflecting lower commodity prices.

U.S. Agricultural Trade Policy

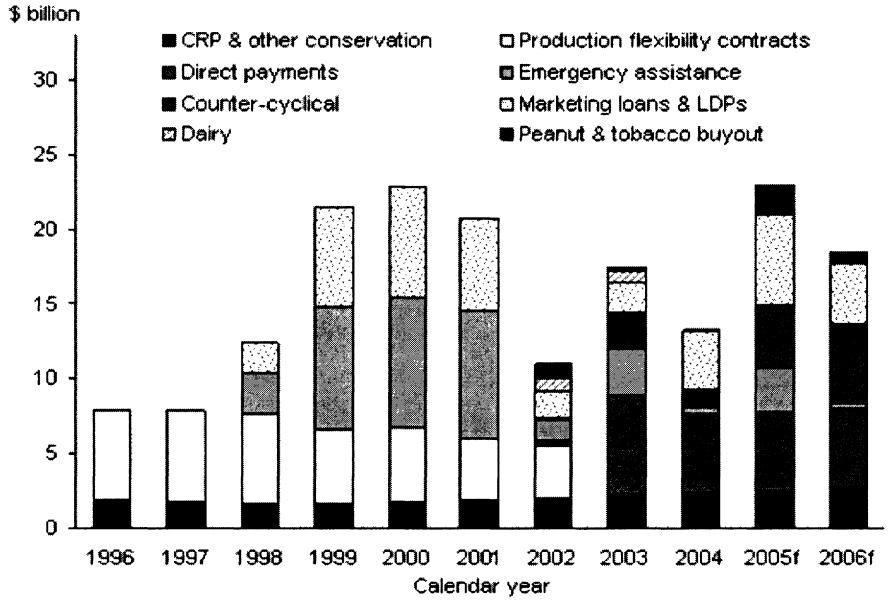
U.S. agricultural trade policy has historically been designed to match domestic farm policy. For example, when the rules for the General Agreement on Tariffs and Trade (GATT) were written in 1947, the United States managed to keep agricultural trade exempt from the general rules prohibiting the use of import quotas, provided that there were domestic production controls on the product in question. In addition, the United States insisted that the GATT rules for agriculture allow the use of export subsidies since it would be impossible to compete in export markets without export subsidies when domestic price support programs had maintained the internal price of the product above the world price.

At the conclusion of the Uruguay Round in 1994, all the import quotas and export restraints in the United States were converted into tariffs, many of which were very high. In order to ensure some market access for agricultural products, the United States established a tariff rate quota (TRQ) system that covered some 24 percent of agricultural tariff lines. For most products in the TRQ system, the tariff level for in-quota quantities is fairly low, averaging about 10 percent. The over-quota tariff levels, however, are prohibitively high, with an average of 52 percent.

In the Uruguay Round a tariff-cutting formula was designed to allow countries to protect their sensitive agricultural products. Developed countries were required to reduce tariffs by an average 36 percent with a minimum cut of 15 percent on each tariff between 1995 and 2000. As a result of the recent round of tariff cuts, U.S. bound tariffs on most agricultural products are relatively low, averaging about 12 percent. This relatively low figure, however, masks some high levels of protection for a number of products including dairy, sweeteners, and tobacco (Figure 2).

[3] The quota buyout is the purchase of marketing quotas by the federal government for the purpose of phasing out such quotas, thus significantly reducing price distortions and eventually government outlays.

Figure 1: Commodity and Conservation Program Payments, 1996–2006



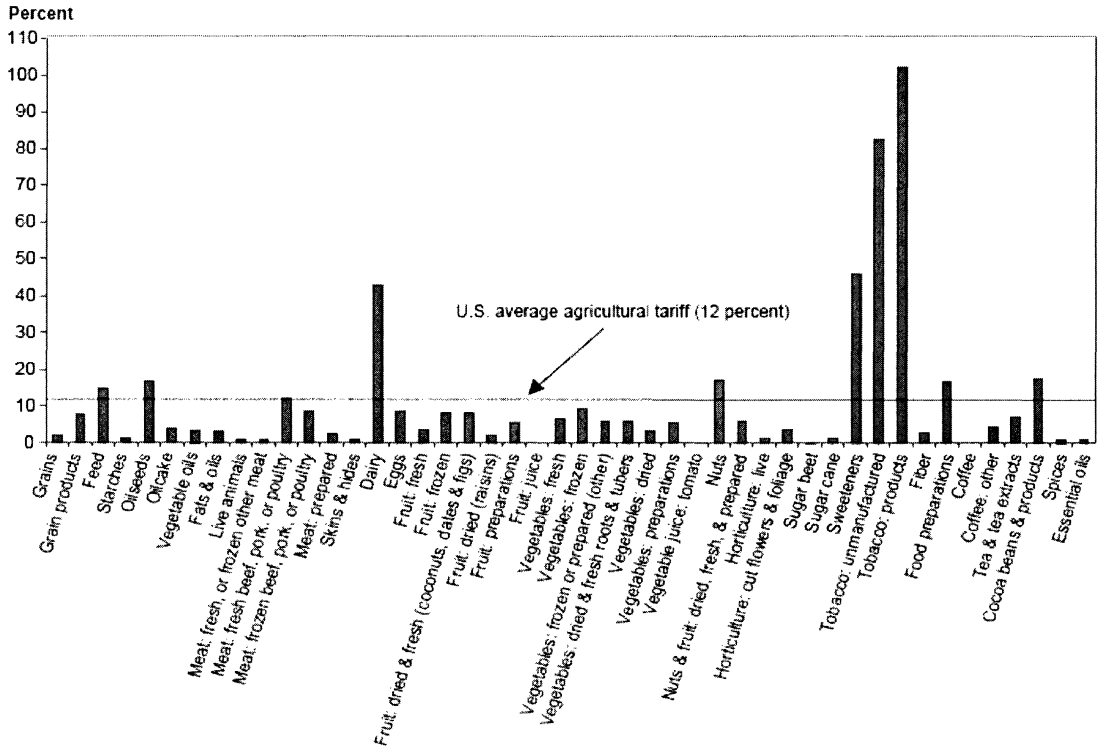
Note: CRP = Conservation Reserve Program. f = forecast.
Source: ERS, USDA 2006a.

Table 1: TRQs in the United States

Average tariff levels (%)			Number of tariff lines			
Tariff (all lines)	In-quota tariff (TRQ lines)	Over-quota tariff (TRQ lines)	Tariff-lines without TRQs	Tariff-lines with in-quota tariffs	Tariff-lines with over-quota tariffs	TRQ lines as percentage of total
12	10	52	1,198	190	182	24

Source: ERS, USDA 2006b.

Figure 2: Average URAA Bound Tariff Rates by Commodity Group



Source: ERS, USDA 2006b.

Within the 46 product categories shown in Figure 2, individual tariffs exceed the overall average tariff rate of 12 percent in 9 categories, of which 7 contain megatariffs (tariffs over 100 percent).[4] The highest tariffs in the United States are levied on the imports of tobacco products and unprocessed tobacco. Even though most of the tariffs in the two tobacco categories are below 10 percent, the averages are inflated by the presence of 4 megatariffs, each equal to 350 percent. Megatariffs are also found in dairy products, oilseeds, nuts, and sweeteners. All the 24 megatariffs in the United States form the over-quota tariff in a TRQ, so that only limited market access is being provided for these products at the lower in-quota rates.

The 2002 Farm Bill authorizes a series of programs designed to increase exports of U.S. farm products. These programs, which are extremely popular with U.S. commodity groups and export firms, include export credit guarantee programs, market development programs, export enhancement programs, food aid and development programs, technical barriers to trade, and trade-related programs in other titles. It is important to note that some of the export support programs provide direct subsidies (US$80 million in 1999) that are prohibited by WTO rules. The United States was thus committed to reduce them by 36 percent in value and 21 percent in volume from the 1986–1990 base period during the five-year implementation period from 1995 to 2000. The United States is a minor export subsidizer, however. In comparison, the EU has provided the largest subsidies to exporters, amounting to US$5 billion in 1999.

[4] Tariffs are bound rates based on final implementation of the Uruguay Round Agreement on Agriculture (URAA). In-quota TRQ, over-quota TRQ, and all non-TRQ rates were used to calculate simple unweighted average tariffs.

Stakeholders

Domestic Stakeholders

The essential aim of U.S. agricultural support and trade policy is to guarantee adequate farm income, support high and stable domestic commodity prices, and promote foreign trade. Domestic farm policy as reflected in the multiyear omnibus farm bills is primarily concerned with the methods and levels of support that the federal government provides to agricultural producers. More generally, U.S. agricultural policy deals with agricultural business, agricultural trade, conservation and environment, domestic food assistance (primarily food stamps) and foreign aid, agricultural credit, rural development, agricultural research and education, and other programs. Debate over U.S. agricultural policy thus involves a diverse group of domestic stakeholders. These stakeholders usually have very different and sometimes conflicting goals. Table 2 shows the different types of stakeholders with their relevant interests in U.S. agricultural policy. It can be argued that the U.S. government is also a domestic stakeholder because it has the responsibility of balancing the interests of different groups and it has to bear the costs of implementing the farm policies.

Within the United States, even though the percentage of the farm population and the direct contribution of farming to national gross domestic product (GDP) have declined over time, the range and importance of interest groups concerned with agricultural policy are expanding. Historically, domestic stakeholders have included farmers of different sizes, agribusinesses, consumers, taxpayers, and other agriculture-related entities. Agricultural policy debates have revolved around issues such as better safety nets for farmers (including higher commodity prices), lower food prices for consumers, and lower agricultural spending for taxpayers. In the past two decades, increased personal incomes and public awareness of social and environmental issues have generated more interest in food safety, environmental quality, and social welfare and brought about new stakeholders such as environmentalists and social advocates. Within this diverse set of interest parties, it should be noted that consumers and small farmers, although apparent stakeholders in U.S. agricultural policy, have little or no influence in policy setting. Large farmers, farmer organizations, and agribusinesses have been much more influential in crafting U.S. agricultural policies.

International Stakeholders

U.S. agricultural policy also has international stakeholders. These stakeholders are developed countries such as Canada, the EU, and Japan, whose agricultural policies are in many ways affected by the U.S. policies; and developing countries and their poor farmers who either export to the United States or compete with it in the world market.

High tariffs and over-quota TRQ rates for certain products, like sugar and dairy products, set trade barriers that effectively restrain certain foreign exporters from entering the U.S. market, inflicting welfare losses for these exporting countries. But for nations that enjoy preferential treatment these prohibitive tariffs may be beneficial. For instance, the North American Free Trade Agreement (NAFTA) has made it possible for Mexico to export sugar to the United States to benefit from the high U.S. prices maintained by the *de facto* import quotas applied to all other potential developing-country suppliers.

U.S. domestic subsidies cause more international concern than its market access policies. Subsidies linked to market prices are considered trade distorting. The inclusion of higher loan rates and new countercyclical payments in the 2002 Farm Bill, as well as the continuation of price support programs for a number of commodities, have caused many critics to question the stated U.S. commitment to limit trade-distorting subsidies to agreed-upon levels. Although spending on production- and trade-distorting policies in the United States does not breach the its WTO limits, the sheer size of farm subsidies provided in the 2002 Farm Bill causes concern about the ability of U.S. trade negotiators to persuade the EU and other developed countries to lower their subsidies.[5] And without substantial reductions in subsidies in rich countries, the prospect of a new agreement on agriculture in the Doha Round appears to be slim.

[5] According to the most recent WTO notification, the total U.S. trade-distorting (amber box) subsidies as measured by the Aggregate Measure of Support (AMS) amounted to US$14.4 billion in 2001, which is lower than the WTO ceiling of US$19.1 billion.

Table 2: Domestic Stakeholders and Their Interests

Stakeholders	Interests
Small family farmers	
• Limited-resource farmers	• Income support; credit; education
• Farming as primary occupation, low sales (<US$100,000)	• Price and income support; credit; education
• Farming as primary occupation, high sales (US$100,000–US$249,999)	• Price and income support; price stability; credit; education; risk management
• Retirement	• Income support not tied to production; higher land values
Other family farmers	
• Large farms (sales $250,000-$499,999)	• Higher and more stable prices; freedom from government regulations; risk management
• Very large farms (sales $500,000+)	• Higher and more stable prices; freedom from government regulations; risk management
Agribusiness	
• Nonfamily farms	• Higher and more stable prices; freedom from government regulations; risk management
• Processors	• Adequate high-quality supplies; low input prices; high processed product prices; strong export markets
• Throughput companies	• Adequate consistent-quality supplies; strong export markets
Taxpayers	
• National	• Low program costs; low administration costs
• Regional	• Higher local tax revenue from increased incomes and higher land prices
Consumers	• Low food prices; food safety; adequate food supplies; variety of food types; healthful food
Environmentalists	
• Conservationists	• Prevention of soil erosion; preservation of farmland
• Water quality advocates	• Agricultural practices that limit migration of agrichemicals from farms to water
• Wilderness advocates	• Maintenance of open space
• Animal rights advocates	• Humane treatment of animals
Rural communities	
• Long-time residents	• Maintenance of traditional communities and rural lifestyle; employment opportunities; open space preservation; viability of rural communities
• New residents	• Open space; odor control; rural landscapes
• Tourists	• Rural landscapes; recreational/heritage activities
Social welfare advocates	
• Civil rights advocates	• Adequate economic opportunities for minorities; opportunities for minority farmers
• Antipoverty advocates	• Provision of minimum income levels for rural residents
• Agrarians	• Maintenance of viable small-scale agriculture

Source: ERS, USDA 2006a.

Many believe that the U.S. 2002 Farm Bill, and farm bills in general, have a significant, and in most cases, damaging impact on the farm sectors and national economies of many developing countries. High U.S. subsidies induce overproduction, which in turn depresses world prices, meaning that poor-country farmers earn less for the products they sell. Gradually, they are driven out of the world market as well as their own local markets, as they simply cannot compete with the prices of dumped goods, which are sometimes priced even lower than production costs (world cotton prices, for example, are now well below average production costs). In most developing countries, agriculture remains the essential, and sometimes the only, driver for economic growth, rural development, and poverty alleviation. Dumping highly subsidized agricultural commodities into developing countries destroys their only opportunity to grow and further impoverishes their economies. At the household level, lost commodity sales deprive farmers of their ability to send their children to schools, to access basic public services, to buy medicines, and to feed their families. For countries that are heavily dependent on commodity exports for foreign exchange earnings, dumping can also lead to severe trade imbalances and substantial risks of debt crises.

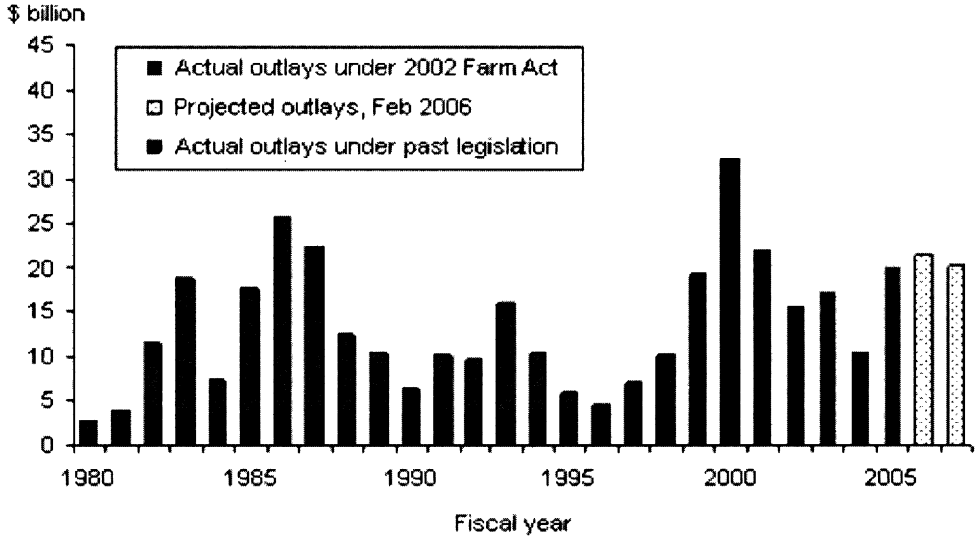
Policy Issues

Budget

All the U.S. domestic farm support payments are financed by the Commodity Credit Corporation (CCC), a wholly owned government corporation chartered in 1933 to stabilize, support, and protect farm incomes and prices. In addition to price and income support programs, the CCC also provides export subsidies and support for certain conservation programs such as the Conservation Reserve Program (CRP). CCC borrows money from the U.S. Treasury and repays the borrowing from program revenues and congressional appropriations.

The pressure to reduce the federal budget deficit and to control agricultural spending necessitates a reform of current farm policy. CCC outlays are now projected to average over US$20 billion annually through fiscal year 2007 (Figure 3), at a time of a deepening federal deficits and more pressing national priorities. For example, as the U.S. population ages, the country will see greater demand for budget spending on Social Security, Medicare, and Medicaid, which already account for more than 40 percent of the total U.S. budget. Moreover, the return to large federal deficits means that more of the federal budget will be allocated to interest payment on national debts.

Figure 3: Commodity Credit Corporation (CCC) Net Outlays, 1980–2007



Source: ERS, USDA 2006a.

Trade

The commodity program provisions in the 2002 Farm Bill have attracted widespread criticism from those in the United States and abroad who view them as reversing the market-oriented course the U.S. Congress had charted for long-term farm policy in 1996. These critics argue that the bill perpetuates outmoded, commodity-oriented policies that tie support to the prices of a few major crops (Tweenten 2002). With legislated target prices and loan rates set well above market prices, U.S. producers will continue to overproduce supported commodities, distorting market prices and global trade and causing trade disputes. The recently resolved dispute with Brazil on upland cotton subsidies and unfavorable WTO rulings against the United States illustrate the urgency of reform.

Furthermore, the adoption of expanded farm subsidy programs as reflected in the 2002 bill has undermined U.S. credibility in world trade negotiations, where the United States has called on other countries to reduce their own trade-distorting agricultural subsidies. As part of the URAA, countries committed to continue reform. Negotiators have already agreed on a framework that commits countries to reduce domestic support (20 percent over a 6-year period for developed countries and 13 percent over 10-year period for developing countries). The political reality, however, appears to be that there will be no agreement without further reductions in subsidies. To level the agricultural playing field and gain additional foreign market access, the United States will have to reform its current farm policy by reducing outlays on trade-distorting domestic support programs.

Though less controversial than farm subsidies, high tariffs, especially over-quota rates, have also raised international concerns. The United States, along with the EU and Japan, has a large number of TRQs with high over-quota tariffs designed to prevent imports. In many cases these over-quota tariffs are megatariffs of greater than 100 percent as illustrated earlier. In addition to the several hundred tariff lines covered by TRQs, the United States maintains a list of sensitive products as defined in the Trade Promotion Authority, which covers 184 tariff lines. A closer look at the U.S. tariff profile shows that there are a large proportion of non–*ad valorem* tariffs, which are generally more protective, especially when prices are low.[6]

[6] An *ad valorem* tariff is levied as a fixed percentage of the value of the commodity imported.

Furthermore, even though the United States has a substantial number of zero-tariff lines, there are also many tariffs higher than 12 percent. Many of the TRQs and high tariff lines apply to agricultural products in which developing countries may have a comparative advantage. These products include sugar, dairy products, beef, tobacco, fruits, and vegetables.

Social Equity

The rise in farm incomes may justify a cut in agricultural program spending. According to the U.S. Department of Agriculture (ERS, USDA 2006a), net farm cash income has increased from an average of US$50 billion per year during the 1990s to more than US$80 billion in recent years. Average household income for farm operators reached US$80,000 in 2005, well above the national average income of US$45,000 in that year. Today, farm poverty is at its lowest level in U.S. history owing to the availability of remunerative off-farm employment and on-farm gains in labor productivity. Thus, general safety net programs, such as food stamps or Medicaid, may be more helpful in reducing farm poverty than traditional commodity programs.

Rather than being awarded with regard to need, subsidy payments are based on the types of crops grown. More than 90 percent of all farm subsidies are allocated to farms that produce just a handful of agricultural products in the United States. In addition, current agricultural policies are designed to concentrate farm subsidies among large farms and agribusinesses. Larger farms earn higher incomes, but they are also the ones who benefit more from the farm program payments. In 2004 the largest 7.5 percent of farms in terms of gross receipts (earning over US$250,000 annually) received 56 percent of all government payments (ERS, USDA 2006a). Government assistance programs have also benefited landowners more than growers since these subsidies are capitalized into land values, thereby driving up rental rates. In sum, the current farm policy achieves little in terms of social equity.

Political Feasibility of Reform

If any reform to the U.S. agricultural policy is to take place, there is the issue of politically feasibility. To the extent that current domestic and trade policies prop up domestic prices and generate higher farm incomes, farmers and farmer groups are not likely to find a change appealing. Because the

largest farm groups and agribusinesses are the chief beneficiaries of agricultural policy, they have both the incentives and the resources necessary to invest heavily in maintaining current policies and choke down efforts to reform. Through representative organizations, they have served on federal commissions, testified before Congress, and donated millions of dollars to federal political candidates. Not surprisingly, the House and Senate farm bills include many of the provisions that these groups support, including massive farm subsidies and price supports. Correspondingly, protective trade measures are put in place to supplement domestic farm support. As a result of a strong agricultural lobby, policy reform may not occur for the U.S. agricultural sector in general and for some commodities in particular, like sugar and dairy products. Farmer groups have successfully blocked constructive proposals in recent farm bills and negotiations at the Doha Round.

Policy Options

Domestic Support

A number of operational approaches are available for reforming domestic support in the United States. First, the post–New Deal "cash-out" farm payments could be continued and expanded.[7] For example, shifting to cash-out payments for commodities such as sugar and dairy would provide gradual and partial reform that would reduce the market intrusiveness of current farm programs over the long run by offering beneficiaries a continuous stream of cash compensation payments. The benefits of pursuing a cash-out system for these commodities would be fewer market distortions, fewer production restraints, and more competitive export pricing. But cash-outs also have drawbacks. It is not clear how much cash-out measures have decoupled farm support from production decisions and trade effects. Even when decoupled, a cash-out system entails an open-ended commitment to support payments. Dirty decoupling under a cash-out and the ongoing character of the subsidization remain obstacles to trade liberalization.

Alternatives to the cash-out approach for ending intrusive farm program interventions, or even for ending a cash-out itself, can be distinguished based on the speed of reform implementation and whether or not compensation is provided to beneficiaries of the programs (Table 3). A buyout is a quick termination of support entitlements, made politically palatable through significant but temporary compensation up front, in the form of a large cash windfall. A squeeze-out is an incremental reduction in the market intrusiveness and generosity of farm programs, managed slowly enough to avoid triggering a defensive backlash from lobby groups representing subsidy-dependent farmers, yet significant enough over time to reduce distortions and costs and to inspire voluntary non-participation by market-oriented commercial farmers. A cutout is a quick termination of all program support entitlements without compensation. None of these alternatives to a slow compensated cash-out has proven feasible on a large scale in the United States (Orden et al. 1999).

Market Access

The URAA approach to agricultural tariff reduction kept in place two characteristics that describe the current profiles of global agricultural tariffs: (1) differences among countries in their average agricultural tariff; and (2) variation, or dispersion, in tariff rates across commodities within countries' tariff schedules. The average U.S. agricultural tariff of 12 percent is relatively low in comparison with average agricultural tariffs in Canada (24 percent), the EU (21 percent), Japan (33 percent), and Norway (152 percent). Compared with other industrialized countries, the United States also has a unique tariff dispersion: more than 50 percent of its tariffs are extremely low, at 5 percent or less, while only a very small share exceed 100 percent (Wainio et al. 2001).

Further tariff reforms in the United States can take two broad approaches: formula and sectoral approaches. The formula approach defines some general rule that applies to all tariffs, whereas the sectoral approach focuses on one commodity or commodity group. Within the formula approach, there are two types of formulas for targeting the level and dispersion of tariffs: linear reductions and harmonization. A linear reduction formula reduces the average tariff rate by reducing all tariffs proportionately. In contrast, harmonization formulas target tariff dispersion through progressively larger reduction of higher tariff rates. In practice, many

[7] Orden et al. (1999) define "cash-out" payments as taxpayer payments to farmers to replace the support programs that previously propped up commodity market prices.

Table 3: Alternative Farm Support Reform Strategies

Compensation	Speed of Implementation	
	Slow	Fast
Yes	Cash out	Buyout
No	Squeeze out	Cutout

Source: Orden et al. 1999.

of the tariff reduction formulas proposed in past trade negotiations have included variants that address both tariff levels and tariff dispersion. Many combine some overall reduction of the average rate with harmonization so that all tariffs are reduced while the problem of tariff dispersion is not worsened.

There is also a need to reform the TRQs in the United States, although there is no single best way to do so. One reason is that individual TRQs vary with respect to the component of the TRQ (under-quota tariff, quota, or over-quota tariff) that restricts trade. For under-fill TRQs, the within-quota tariff is the binding constraint, so reducing the within-quota tariff is likely to increase market access. In contrast, market access will be enhanced by lowering the over-quota rate for over-fill TRQs. In addition, an infinite expansion of quotas would eliminate the quota system, and the TRQ would then become a simple tariff regime. In the Doha Round, the United States has proposed eliminating all in-quota tariffs and enlarging all quotas by 20 percent.

Export Subsidies

The URAA approached the reform of export subsidies by placing restrictions on both the volume and the value of subsidized exports. Targeting both components creates effective constraints in times of both high and low prices. When prices are low, both the value and the volume limits act as constraints. These limits help to prevent the disposal of excess supply onto export markets, in an effort to raise low domestic prices. Value limits become more binding as prices fall because the subsidy (the difference between the high internal support price and the declining world price) becomes larger. When world prices are high, the value constraint becomes less binding, but the volume constraint can still set some limit on export subsidies.

Compared with other developed countries, especially the EU, the United States has made limited use of export subsidies. Consequently, it is pushing hard to roll back or eliminate export subsidies in the current negotiations. Although direct export subsidies are small in the United States, various other export support programs exist, many of which are controversial. For example, in the recent cotton dispute with Brazil, the WTO dispute settlement body found the popular export credit guarantee programs to have functioned effectively as direct export subsidies to cotton exporters, because the financial benefits returned by these programs failed to cover the programs' long-run operating costs. This finding applies not just to cotton, but to all commodities that benefit from U.S. commodity support programs and receive export credit guarantees. As a result, export credit guarantees for any recipient commodity are now subject to previously scheduled export subsidy commitments for that commodity. Since the United States has proposed to phase out all direct export subsidies, a viable strategy to maintain sufficient support to agriculture without violating WTO rules is to switch from direct export subsidies to direct payments.

Enhancing the Feasibility of Reform

Several steps can be envisioned that would improve the prospects for adherence to reform in the United States. Domestically, eliminating the permanent legislation for farm support programs will put an end to trade-distorting farm support policies. In the international arena, a new WTO agreement on agriculture built around tighter limits on U.S. amber box measures, as well as higher reduction commitments on tariffs and export subsidies, might also provide effective enforcement mechanisms.

Consumers can influence the adoption of reform to the extent that their demand behavior contributes to declining benefits under old policy regime.

But experience from past agricultural reforms suggests that a policy change will require substantial support from producers. The emergence of such support depends on either shrinking benefits for producers in the old policy regime or the potential expansion of benefits in the new policy regime. Any policy change generates benefits and costs, however, and the acceptance or refusal of a reform depends on whether affected producers are net winners or losers. For producers who are net losers, compensation is necessary and should be made lucrative enough to bring about support from this group.

Assignment

Your assignment is to design a policy reform package (in terms of domestic support, market access, and export subsidies) that is both politically feasible in the United States and beneficial for the developing countries.

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Chapter Twelve
CAFTA's Impact on U.S. Raw Cane Sugar Trade (10-4)
by Alexandra C. Lewin

Executive Summary

Sugar trade has been at the heart of many international trade agreements. Sugar is one of the largest agricultural industries in the United States and thus is a sensitive commodity. Groups around the world have a vested interest in how the United States handles sugar production and trade. The latest change to the U.S. sugar program was the passage of the Central American Free Trade Agreement (CAFTA).

The United States imports raw cane sugar using a tariff-rate quota (TRQ) system. This trade regime sets in place specific tariffs within a set volume of sugar. If an exporting country exceeds the given quota within the allotted TRQ, the country faces a second-tier (and much higher) tariff. Owing to past trade agreements, such as the North American Free Trade Agreement (NAFTA), the Generalized System of Preferences, and the Caribbean Basin Initiative, many countries already have duty-free access, within a set volume, to the U.S. sugar market.

The pre-CAFTA TRQ system was criticized for creating artificial trade barriers and excluding low-cost producers from exporting raw cane sugar to the United States. The sugar-exporting countries that participate in the TRQ regime are different from those who participate in the tariff- and quota-free U.S. sugar import programs. These differences may serve to illustrate some of the trade imbalances within the U.S. TRQ system.

On August 2, 2005, U.S. President George Bush signed DR-CAFTA,[1] comprising Costa Rica, the Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua, and the United States. This agreement will affect both sugar exports from these Central American countries and the U.S. sugar program.

It is believed that CAFTA will help Central American countries gain access to the U.S. sugar market. CAFTA may also affect the price of raw cane sugar in the United States, marketing allotments to U.S. sugar processors, and U.S. sugar industry jobs. Many U.S. sugar farmers and processors oppose CAFTA, fearing that the removal of trade barriers set in place under the TRQ regime will lead to a loss of U.S. sugar-producing jobs and an influx of low-cost sugar from abroad. Another question is whether or not imports from these Central American countries will affect other sugar-producing developing countries that have preferential access to the U.S. market from other trade agreements.

Like most trade agreements, however, CAFTA contains a safeguard clause:

> The Agreement also includes a mechanism that allows the United States, at its option, to provide some form of alternative compensation to CAFTA country exporters in place of sugar imports. That allows the United States to restrict imports eligible to enter under the CAFTA if the U.S. sugar program is threatened, and instead provide equivalent benefits to the CAFTA countries to make up for the lost access (USTR 2005).

Your assignment is to develop a set of polices under CAFTA that will satisfy all stakeholders. Discuss the policy issues with regard to alternative import mechanisms under CAFTA and which stakeholders might support or resist these policies. Justify your recommendations, and assess the consequences for each stakeholder group.

[1] After the Dominican Republic joined CAFTA in 2005, the agreement has often been known as "DR-CAFTA," but in this case study, it will be referred to as simply "CAFTA."

Background

The Tariff-Rate Quota System for Raw Cane Sugar

Sugar can enter the United States through a variety of paths and policies, although the majority of U.S. sugar is imported through the use of tariff-rate quotas. TRQs were established in 1994 in the Agreement on Agriculture through the Uruguay Round in an effort to abide by the General Agreement on Tariffs and Trade (GATT) regulations. The previous import system, direct quotas, was said to be in violation of GATT Article XI, which prohibited quantitative import restrictions. The TRQ system is a two-tiered tariff; a certain number of imports (called "in-quota" imports) are allowed into the United States at a low tariff, and any number of imports above that initial amount are subject to a much higher "out-of-quota" tariff (ERS/USDA 2005). This system is designed, on paper, to reduce market barriers and eliminate the direct quota placed on many goods.

Other provisions within the TRQ system include a minimum market access requirement for imports. The United States was required to import at least 3 percent of its domestic consumption of sugar for six years; in 2000 the rule was changed to 5 percent of domestic consumption. At that point the United States already imported more than 5 percent of its domestic consumption of sugar, however, so the decision about whether to increase its in-quota volume of sugar imports was voluntary.

Sugar TRQs within the United States are based primarily on historical trading patterns. The TRQ in-quota number is based on 40 countries' patterns (or "Olympic market shares") during 1975–1981. This was a period of extremely high world sugar prices during which many countries with high producer costs were able to remain competitive. During these years, exporters with the largest share of the U.S. raw cane sugar market included Australia, Brazil, the Dominican Republic, and the Philippines. The relative proportion of sugar exports from various countries in 1975–1981 was nearly identical to the proportion of TRQ allotments distributed to sugar-producing countries today.

The implementation of TRQs for sugar (and other tradable commodities) can have three effects. First, the in-quota tariff can be the binding constraint, causing even fewer imports than those under the original quota system. Second, the TRQ can act as a two-tiered tariff if there are over-quota imports of a specific good. Third, the in-quota tariff can have the same net effect as the direct quota, leading to the import of the same volume of sugar as under the original quota system. If the in-quota tariff proves to be the binding constraint, many scholars worry about the possibility of "underfill," which occurs when the exporting country does not fill TRQ allotments; the worldwide average TRQ fill rate hovers around 60 percent (Canadian Agri-Food Trade Alliance 2003).

As a result of NAFTA, substantial TRQ allotments are distributed to both Canada and Mexico. Other countries are given specific in-quota allotments each year, set by the U.S. Department of Agriculture (USDA). For fiscal year 2004, Australia, Brazil, the Dominican Republic, and the Philippines were given the largest TRQ allotments for raw cane sugar, refined sugar, and sugar-containing products. There is also a quantity of sugar under the TRQ system that is available for import on a first-come, first-served basis. By examining patterns associated with sugar trade, it is possible to see some of the effects of a TRQ system. It is probable that TRQs benefit a handful of countries with large in-quota allocations; they may also encourage high-cost producers to increase their exports.

Other than TRQs, sugar can enter the United States through three other programs, which are not subject to quotas or tariffs. The three programs are the USDA's Sugar-Containing Products Re-Export Program, the Refined-Sugar Re-Export Program, and the Sugar for the Production of Polyhydric Alcohol Program.

High-Fructose Corn Syrup

As the demand for sugar decreases in the United States, other sweeteners face increased demand. High-fructose corn syrup (HFCS) is a cheap alternative to sugar and is an ingredient in nearly all soft drinks. The production of HFCS in the United States has been increasing at a faster rate than the production of both beet and cane sugar. In an analysis of the TRQ system, it is important to keep in mind the U.S. production, demand, and imports of HFCS. It is possible that increased use of HFCS has resulted in decreased TRQ sugar imports.

The production of HFCS has skyrocketed in the United States. Between 1980 and the 2000s, U.S.

production of HFCS grew from 2.2 million tons to 9.2 million tons. The biggest growth in production, however, came between the years 1975 and 1989, around the same time that U.S. sugar imports had their most significant decline. Production of beet and cane sugar has grown in the United States, but this growth has been slower and not as significant. Consumption of beet and cane sugar has declined, whereas HFCS consumption has increased. The consumption of HFCS increased by more than 1,000 percent between 1970 and 1990.

HFCS can be produced much more cheaply than sugar, so its price is significantly lower than that of sugar. In 2000, for example, raw cane sugar in the United States was priced at 18.4 cents a pound and refined sugar was priced at 24 cents a pound. In contrast, HFCS-42 (a commonly used type of HFCS) was priced at 11 cents a pound in 2000. HFCS is thus a practical replacement for sugar when substitution is possible.

Despite the rise in HFCS, sugar remains a large U.S. industry and TRQs are still the main way the United States imports its sugar. TRQs may not determine how much total sugar gets imported, but they do determine the specific sugar-exporting countries and how much sugar each one of these countries can export into the United States.

Preferential Trade Agreements

In addition to historical trading patterns between 1975 and 1981, a large percentage of U.S. TRQ sugar imports are determined by preferential trade agreements. The United States and other countries have used both regional trade agreements and TRQs to "grandfather" a share of the market for a specific supplier. As many scholars have already documented, however, preferential trade status is often awarded to countries that may not be truly competitive; in fact, some countries in preferential trade agreements might not export a specific good at all if not given preferential trade status. Granting TRQs to high-cost producing countries is just one example of how resources may be misallocated within international agreements. On the other hand, these trade diversions away from some low-cost producers enable other least-developed countries to gain access to potential markets, if they are granted preferential status under a regional agreement.

NAFTA. The North American Free Trade Agreement, established in 1994, has been reducing trade barriers between Mexico and the United States, especially in regard to sugar trade. For the first 15 years of NAFTA, "Mexico's allowable duty-free sugar exports to the U.S. and U.S. duty-free exports to Mexico is the greater of 7,258 metric tons or the quantity allowed under the definition of 'net surplus producer'"(production greater than consumption, including consumption of high-fructose corn syrup) (FAS/USDA 2003). According to the agreement, "If either Mexico or the U.S. were in a situation where they were a net surplus producer during the first six years of the agreement, duty-free access would be provided from the surplus up to 25,000 tons" (FAS/USDA 2003).

Before the implementation of NAFTA, Mexico exported 7,258 metric tons of raw sugar to the United States. By 2001 Mexico exported 116,000 metric tons of sugar (mostly refined sugar) to the United States. At the end of the sixth year (2000), Mexico aligned its tariff regime with that of the United States and implemented TRQ rates that matched U.S. rates. Beginning in year 7 and up to year 15, any tariffs that remain on sugar within this bilateral agreement will be reduced on a straight-line basis to zero (FAS/USDA 2003).

Like all other TRQ allotments, allotments of sugarcane and sugarbeets must be processed in the country of origin. In this case processing must occur in NAFTA territory to qualify for NAFTA preferences, TRQ in-quota tariff rates, or both (FAS/USDA 2003). Countries within NAFTA (Canada and Mexico) also take part in the Refined Sugar Re-export Program. Given that refined sugar now constitutes the majority of Mexico's sugar exports, NAFTA's effect on raw sugar imports is minimal.

The Generalized System of Preferences (GSP)/ Caribbean Basin Initiative (CBI). Approximately 42 countries are given TRQ allotments under the historical method. These 42 countries are geographically dispersed; are small, medium, and large in size; have both large and small sugar yields; and consist of high-cost, medium-cost, and low-cost producers. The Generalized System of Preferences/Caribbean Basin Initiative is an initiative that grants some of these sugar exporters a waiver on in-quota sugar exports to the United States. GSP countries are not permanent, and reviews for eligibility are done periodically, to be renewed by Congress.

Congo-Brazzaville, Côte d'Ivoire, Gabon, Haiti, Madagascar, Papua New Guinea, Paraguay, St. Kitts and Nevis, and Uruguay are currently part of the GSP. These designated countries have been given quota rights that allow them each to export 7,258 metric tons of raw cane sugar to the U.S. duty-free. Note, however, that Gabon, St. Kitts and Haiti do not produce commercial quantities of raw cane sugar and will likely fall short in fulfilling their quota allocations. Additionally, the CAFTA countries are no longer eligible for GSP status because they are allowed duty-free exports to the United States under CAFTA. Finally, Argentina, Australia, Brazil, the Dominican Republic (now part of CAFTA and previously under the Caribbean Basin Initiative), and Taiwan are not eligible for GSP status.

One program within this Generalized System of Preferences is the Caribbean Basin Initiative (CBI), an expansion of the Caribbean Basin Economic Recovery Act (CBERA Expansion Act) of 1983. Since 1983 the act has been expanded through the creation of the CBERA Expansion Act and the U.S.-Caribbean Basin Trade Partnership Act of 2000 (CBTPA). Thus far, the initiative benefits 24 countries, all of which export sugar into the United States duty-free. This program was originally designed to promote economic development in Central America and the Caribbean islands through private sector initiatives (MAC/USDOC 2000). The goal was to expand foreign and domestic investment in nontraditional sectors, diversifying CBI country economies and expanding their exports. For fiscal year 2004, the United States granted a total of 381,119 metric tons of in-quota allotments to CBI countries, creating the potential for 34 percent of U.S. TRQ sugar to be imported from these countries.

Altogether, the allotments granted to the GSP minimum-quota countries and the CBI countries enable these countries to account for the majority of TRQ sugar allotments given out for import into the United States.

The Policy Challenges

CAFTA

On August 2, 2005, President Bush signed CAFTA, the latest preferential trade agreement incorporating Costa Rica, the Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua, and the United States (Olson 2005). One of the most contentious issues throughout the CAFTA debate was its potential impact on sugar exports from Central American countries and on the U.S. sugar program.

Tariff- and Quota-Free Import Programs

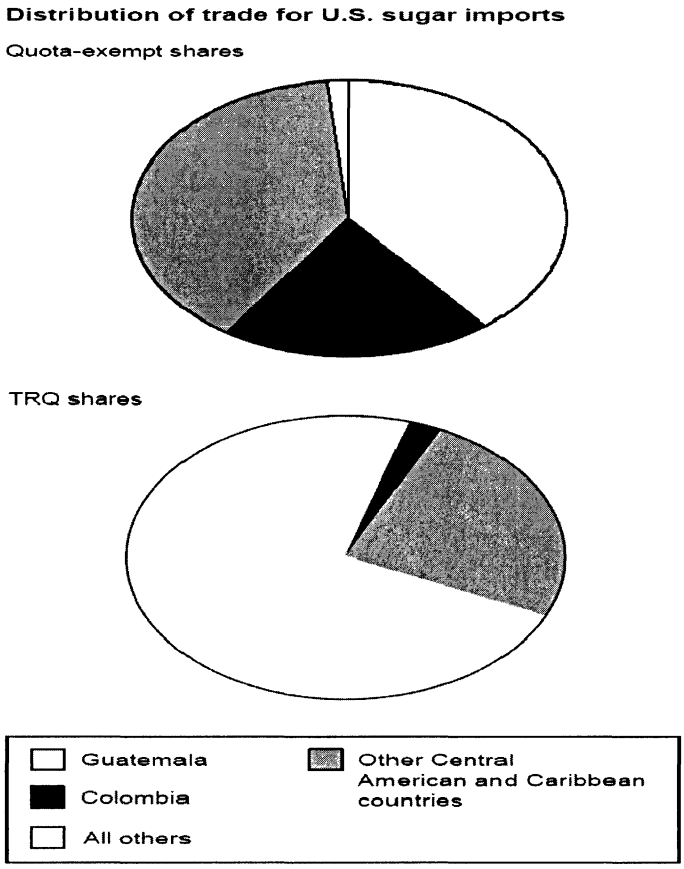
As previously stated, raw cane sugar can also be exported to the United States under tariff- and quota-free programs. One program is the USDA's Sugar-Containing Products Re-Export Program (FAS/USDA 2004). Here, the United States can buy sugar at the world price to use in products that will later be exported onto the world market. The Refined-Sugar Re-Export Program, another way the United States can import sugar, can "facilitate the use of domestic refining capacity to export refined sugar to the world market" (FAS/USDA 2004). Last, the Sugar for the Production of Polyhydric Alcohol Program accounts for a small percentage of sugar imports. In general, the U.S. government allows domestic sugar refiners to import raw sugar without tariff-rate quotas as long as the refined sugar is (1) re-exported in refined form, (2) re-exported in sugar-containing products, or (3) used for the production of polyhydric alcohol. Through the re-export programs, a refinery can apply to the secretary of agriculture for a license to import up to 50,000 metric tons of raw sugar; the sugar must then be re-exported or transferred to a manufacturer (of sugar-containing products for export) within 90 days of import. These raw cane sugar imports under the re-export program can be replaced with refined sugar from either sugar beets or sugar cane.

Scholars believe that imports of sugar under the tariff- and quota-free programs may be representative of a free trade sugar model. These programs presumably illustrate what happens to exports into the United States without import restriction. Two general characteristics of the countries exporting under the "free trade" model include their low cost of production and their proximity to the United States. The disparity between those exporting under the tariff- and quota-free programs and those sugar exporters under the TRQ system is clear. This disparity, then, lends itself to a further investigation of the differences between the countries that export to the United States under these two distinct trade regimes.

One method of examining the effects of TRQs is to compare the established TRQ trade flows with the trade flows under tariff- and quota-exempt

export shares (which occur primarily under the re-export programs). Below are the general differences between TRQ sugar imports and sugar imports under tariff- and quota-free programs (Skully 2001). Figure 1 illustrates that when imports into the United States are free of tariffs and quotas, Colombia, Guatemala, and other Central American countries dominate the U.S. sugar market. When TRQs are used, however, Colombia and Guatemala have small shares of overall U.S. sugar imports; Central American and Caribbean countries hold about one-fourth of the U.S. sugar import market, and "all others" account for slightly less than three-quarters of U.S. sugar imports.

Figure 1: Quota–Exempt U.S. Sugar Imports Compared with U.S. TRQ Sugar Imports



Source: Skully 2001.

Stakeholders

U.S. Stakeholders

Opponents of CAFTA believe that its passage may lead to increased bilateral and regional trade agreements, causing increased duty-free sugar imports into the United States and the eventual destruction of the U.S. sugar industry. The Sugar Alliance, a coalition of sugarcane and sugar beet farmers, processors, and others involved in the sugar industry, was perhaps the most vocal U.S. opponent to the passage of CAFTA. They believe that, in order to eliminate the sugar dumping that occurs in the world market, "the drastic reform necessary to correct the world sugar market can only be achieved in comprehensive, global negotiations in the World Trade Organization and not in bilateral or regional Free Trade Agreements, such as CAFTA" (Suppan 2004). Other opponents include primarily farm-based agricultural groups (excluding the American Farm Bureau) (Suppan 2004).

Other U.S. commodity organizations support CAFTA. President Bush received a letter from 39 commodity and agribusiness organizations noting their support for CAFTA and stating that this trade agreement "will expand U.S. agriculture exports and put U.S. agriculture on an equal footing with its competitors in these markets" (Jurenas 2004). Among the most surprising signatories was the National Corn Growers Association, a member of the Sugar Alliance (Suppan 2004).

Currently, the U.S. sugar system's primary beneficiaries, according to the Government Accountability Office, are domestic sugar farmers and processors (Markheim 2005). In 1996 these groups pulled in about US$800 million in benefits, and in 1998, about US$1 billion.

Consumers in the United States will not see much change in the price of sugar from the implementation of CAFTA. Because sugar imports under CAFTA are still relatively small, the U.S. trade protection system implemented on sugar imports keeps consumer prices relatively high. Yet as more and more sugar is imported into the U.S. duty-free within other trade agreements (such as the U.S.-Mexico agreement), sugar prices to consumers will decrease. If U.S. consumer prices drop as a result of duty-free imports, the United States could maintain its sugar program by increasing subsidies to producers.

Stakeholders outside the United States

Approximately 40 countries export sugar to the United States under the TRQ system. Many of these countries depend on guaranteed duty-free sugar exports. Of these countries, some are high-cost producers, some are low-cost producers, some are geographically far from the United States, and some are within close proximity. Some countries have a high production volume of sugar while others produce only a small amount each season. Changes in the TRQ system will affect the flow of sugar exports from these countries. These countries thus have a stake in how TRQs are allocated, as well as in how trade agreements such as CAFTA will affect their region.

Several factors determine a country's competitiveness on the world market; selected variables are included in Tables 1 through 3. Table 1 lists the low-cost and high-cost producers involved in raw cane sugar production.

Of all the cane sugar producers, Australia and Brazil have the lowest production costs. They are, however, the only countries that still face an in-quota tariff at 0.625 cents a pound. Given that they are the lowest-cost producers and the only countries to face an in-quota duty, they may argue that they should become part of a trade agreement that allows them duty-free access into the United States.

It is important to compare TRQ allotments with actual TRQ imports to determine whether or not the MFN rate (out-of-quota tariff) is prohibitive and is preventing exporting countries from increasing the volume of raw cane sugar exports to the United States. It may be the case that low-cost producers with high MFN rates are losing U.S. sugar market share to other high-cost producers with lower tariff rates (or no tariffs). Again, this is one way in which trade flows can become distorted; the United States may be favoring imports from countries that are not actually the lowest-cost producers.

Another important factor is the distance of these countries from the United States. Given that Australia is one of the farthest countries from the United States, it may face high transportation costs.

Table 1: Lowest- and Highest-Cost Producers of Raw Cane Sugar (excluding transportation costs), FY 2003/2004

Country	Production Cost Rank	TRQ Allotment (metric tons)	TRQ Actual (metric tons)	Imports under Other Sugar Programs (metric tons)	Production Volume (metric tons)	Miles from United States	In-Quota Tariff Rate (US¢/lb.)
Australia	1	87,402	62,873	0	36,012,000	10,627	0.625
Brazil	1	152,691	143,845	0	386,232,000	4,784	0.625
Colombia	2	25,273	25,273	81,321	36,600,000	2,480	0
Guatemala[a]	2	50,546	50,546	172,285	17,500,000	2,056	0
Sudan	2	0	0	0	5,500,000	6,359	0
Malawi	3	10,530	10,530	0	1,900,000	7,769	0
Mozambique	3	13,690	13,690	0	400,000	8,193	0
Swaziland	3	16,849	16,849	0	4,000,000	8,133	0
Thailand	3	14,743	14,743	0	64,407,744	9,038	0
Zimbabwe	3	12,636	596	0	4,100,000	7,788	0
Zambia	3	0	0	0	1,800,000	7,546	0
Ecuador	4	11,583	11,583	0	5,690,895	2,822	0
El Salvador[a]	4	27,379	27,379	36,900	4,531,531	2,072	0
Peru	11	43,175	42,882	0	9,550,000	3,365	0
Paraguay	11	7,258	1,649	0	3,300,000	4,655	0
Papua New Guinea	11	7,258	7,258	0	441,600	9,310	0
Panama	11	30,538	30,538	0	1,500,000	2,201	0
Côte d'Ivoire	11	7,258	0	0	1,155,000	4,799	0
Mexico	12	7,258	1,274	0	42,126,500	2,086	0
Jamaica	12	11,583	11,501	0	2,400,000	1,545	0
Barbados	13	7,371	0	0	364,555	2,093	0
Taiwan	14	12,636	41	0	163,000	7,801	0
Saudi Arabia	14	0	0	0	0	6,382	0

Source: Data are from Economic Research Service, U.S. Department of Agriculture.
Note: All production cost ranks were conducted using FY 2003/2004 exchange rates. This rank may change as exchange rates change over time.
[a] El Salvador and Guatemala are part of the recently passed Central American Free Trade Agreement.

Aside from Australia and Brazil, many developing countries are low-cost producers. Colombia, Guatemala, and Sudan also have very low production costs. Colombia currently has duty-free access to the United States and is filling its TRQ allotment. Colombia also has a substantial volume of sugar exports under other U.S. sugar import programs and is relatively close to the United States. Given that it has such a large volume of sugar exports under the other sugar import programs, Colombia may benefit from increased TRQ allotments.

Guatemala is also a low-cost producer. As part of CAFTA, Guatemala is guaranteed increased raw cane sugar exports to the United States. Of all the CAFTA countries, Guatemala has been allotted the largest increase in in-quota sugar exports.

Brazil produces by far the greatest amount of raw cane sugar. It is a low-cost producer and is relatively close to the United States. The country is given the largest U.S. TRQ allotment and comes close to filling it. In contrast, Saudi Arabia and Taiwan are among the highest-cost producers of raw cane sugar. Many of the high-cost producers have been given substantial TRQ allotments by the United States. Despite their duty-free TRQ allotments, 4 out of 14 of these countries did not export any raw cane sugar to the United States in 2003/2004. Other countries, such as Mexico and Paraguay, did not come close to filling their given TRQ allotments.

Many of these high-cost producers would likely be affected by the removal of TRQs. High-cost producers that fill their quotas will be most affected. Without the given TRQ allotments, these high-cost producers may not be as competitive. If the market becomes inundated with low-cost raw cane sugar from large producers, higher-priced goods will lose market share. High-cost producers located farther from the United States, and where sugar production constitutes a significant portion of agricultural trade, will be most affected.

If sugar trade were liberalized, Panama and Peru could lose a significant share of their relatively large volume of sugar exports, yet the economic impact within these countries is debatable. Both Panama and Peru export less than 2 percent of their countries' sugar production; getting closed out of the U.S. sugar market, then, may not result in any significant negative economic impact.

Table 2 lists the largest producers of raw cane sugar. As one can easily see, a large production volume does not necessarily mean the country is also a low-cost producer. India, for example, is the world's second-largest producer of raw cane sugar yet has high production costs. Mexico is also a fairly large producer of raw cane sugar with one of the highest production costs. Thanks to NAFTA, Mexico has duty-free access to the United States sugar market.

CAFTA Stakeholders

Of the CAFTA countries, Guatemala is the lowest-cost producer, followed by El Salvador (Table 3). Costa Rica, Honduras, and Nicaragua have the next lowest production cost; the Dominican Republic has the highest production cost. (Honduras's production and TRQ allotments are not representative in this year; for an accurate picture of Honduras's sugar production, examine the data from previous years.) Guatemala has the largest production volume; all other CAFTA countries produce substantially less raw cane sugar.

Additional Potential Impacts of CAFTA

Market Access for CAFTA Countries

With the implementation of CAFTA, the office of the U.S. trade representative (USTR) has stated that increased sugar imports from Central America and the Dominican Republic would amount to less than 0.25 percent of total annual U.S. trade with these countries (USTR 2005). Even though the change in the overall percentage of trade with these countries is small, U.S. sugar market access will increase for CAFTA countries. In the first year of the agreement, the USTR estimated that increased market access will amount to about 1.2 percent of current U.S. sugar consumption, up to 107,000 metric tons of raw cane sugar; in year 15, it is estimated that increased market access will amount to 1.7 percent of U.S. sugar consumption, up to about 151,000 metric tons of raw cane sugar (USTR 2005). Over the next several years these countries will be allotted increased TRQs but no reduction in over-quota tariff rates. For the Dominican Republic, TRQs will increase 10,000 metric tons in the first year, and 2 percent annually every year after that (Olson 2005). In addition to TRQs, the United States will create a quota for Costa Rican special goods (organic sugar), not to exceed 2,000 metric tons annually (Olson 2005).

Table 2: Largest Producers (by volume) of Raw Cane Sugar, FY 2003/2004

Country	Production Volume (metric tons)	Production Cost Rank	TRQ Allotment (metric tons)	TRQ Actual (metric tons)	Imports under Other Sugar Programs (metric tons)	Miles from United States	In-Quota Tariff Rate (US¢/lb.)
Brazil	386,232,000	1	152,691	143,845	0	4,784	0.625
India	289,630,016	9	8,424	8,418	0	7,808	0
Thailand	64,407,744	3	14,743	14,743	0	9,038	0
Mexico	45,126,500	12	7,258	1,274	0	2,086	0
Colombia	36,600,000	2	25,273	25,283	81,321	2,480	0
Australia	36,012,000	1	87,402	62,873	0	10,627	0.625

Source: Data are from Economic Research Service, U.S. Department of Agriculture.

Table 3: CAFTA Countries, FY 2003/2004

Country	Production Cost Rank	Production Volume (metric tons)	TRQ Allotment (metric tons)	TRQ Actual (metric tons)	Imports under Other Sugar Programs (metric tons)	Miles from United States	In-Quota Tariff Rate (US¢/lb.)
Costa Rica	6	3,923,870	15,796	15,796	81,321	2,240	0
Dominican Republic	7	5,036,272	185,335	134,471	0	1,552	0
El Salvador	4	4,531,531	27,379	27,379	36,900	2,072	0
Guatemala	2	17,500,000	50,546	50,546	172,285	2,056	0
Honduras	6	4,200,000	10,530	458*	3,440	2,000	0
Nicaragua	6	3,602,840	22,114	19,425	11,878	2,101	0

Source: Data are from Economic Research Service, U.S. Department of Agriculture.

Although the in-quota exports to the United States are duty-free, the second-tier tariff will initially remain in effect. After five years of CAFTA's implementation, the second-tier tariff will be 10 cents a pound. After 10 years, it will be 5 cents, and after 15 years, zero. Beginning in 2008, Mexico will also have unlimited sugar export rights to the United States.

CAFTA's increase in market access has the potential to affect not only the volume of exports allowed from CAFTA countries to the United States, but also many other aspects of the U.S. sugar program.

CAFTA's Impact on the Price of Raw Cane Sugar

As more sugar is imported into the United States, the wholesale price of sugar decreases. As the price decreases, domestic consumption increases. One would expect the price decline to lead to a decrease in sugar acreage in the United States. In the past, however, beet and cane sugar production have been insensitive to price changes (elasticity is 0.22 for sugar beets, 0.11 for sugar cane, and -0.39 for domestic consumption). If the sugar price were to drop below 20 cents a pound, it is predicted that the elasticity of the U.S. sugar supply would increase (Koo et al. 2003).

The world market price for sugar is about 8 cents a pound, slightly more than half the world average cost of production. The U.S.-supported domestic price of sugar is about 21 cents a pound. Countries that export to the United States receive the U.S. supported price for their sugar. There is only one country, Brazil, that has a domestic wholesale price lower than the world price.

Wholesale refined sugar prices to the U.S. farmer dropped by 20.5 percent during 1996–2004, whereas consumer prices increased by nearly 3 percent (Olson 2005). This gap illustrates the disparity between price changes for farmers and consumers.

CAFTA's Impact on Marketing Allotments

CAFTA may also affect marketing allotments for U.S. sugar processors. The secretary of agriculture "will strive to establish an overall allotment quantity that results in no forfeitures of sugar to the Commodity Credit Corporation under the sugar loan program" (USDA 2003, 2). The planting of beets and sugar cane is not restricted, but if processors exceed their marketing allotment, they must store the excess sugar at their expense. In the 1996 Farm Bill, Congress removed marketing allotments but later reestablished them in the 2002 Farm Bill, hoping to increase the price of U.S. sugar.

These marketing allotments are based in part upon the volume of imported sugar used for food (USDA 2003). Thus, as CAFTA increases U.S. sugar market access for many sugar-producing countries, the U.S. sugar program may potentially face an increase in sugar from CAFTA countries that results in a level of imports above the so-called trigger level.

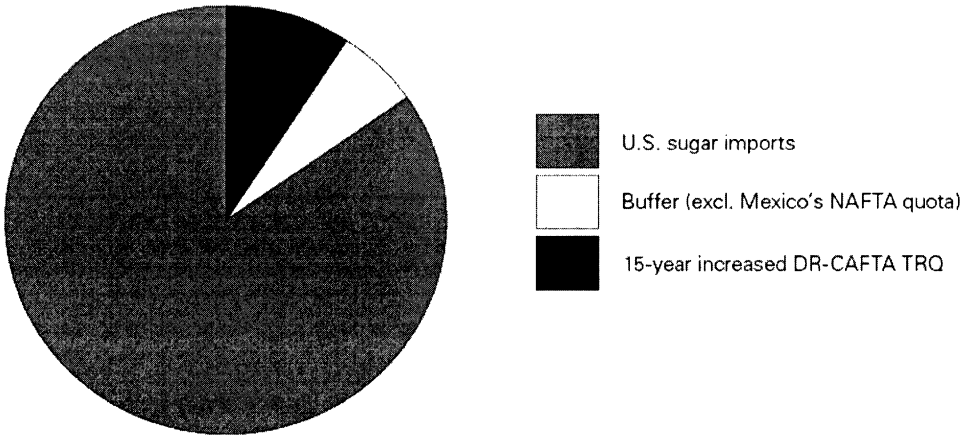
The 2002 Farm Bill set the trigger level at 1.39 million metric tons of total sugar imports. If imports are below this amount, then marketing allotments for the U.S. sugar program are unaffected. But some fear that increased CAFTA imports, together with sugar imports under NAFTA, could surpass the trigger level. If this occurs, the USDA would no longer have the authority to distribute marketing allotments. Sugar producers would be able to produce and sell unlimited amounts of sugar. Production would likely increase, and U.S. sugar prices would fall.

If all countries use their new quotas under CAFTA, then the buffer below the trigger level would remain at 98,000 metric tons (Figure 2). If, however, new trade agreements are established or if Mexico uses its full sugar export quota, then total sugar imports into the United States would surpass the trigger level. According to Olson (2005, 12), "If imports exceed the trigger level and marketing allocations were suspended, then increased domestic production would combine with the release of currently blocked sugar reserves to flood the market and collapse the domestic price of sugar."

CAFTA's Impact on U.S. Sugar Industry Jobs

If CAFTA leads to increased production of sugar outside the United States and decreased sugar production within the United States, many argue that the loss of jobs from the decline of this industry will be insignificant. Although production of sugar in the United States has been increasing, employment in this sector has declined since 1989. In 2003 only 52,000 workers were employed in the sugar industry (farmers and processors),

Figure 2: No-Cost Sugar Policy Jeopardized by CAFTA



Source: Olson 2005.

generating approximately US$5.7 billion in sales. Of the more than 2 million farms in the United States, fewer than 6,000 (0.03 percent) contained sugar beets or cane. If sugar continues to benefit from government protection, Markheim (2005) argues instead that jobs in the sweetener industry (which employs 10 times as many people as the sugar industry) will be threatened.

Questions and Issues to Consider

- If TRQ allocations are eliminated, will poor countries be able to retain their access to the U.S. market?
- What will happen to high-cost producers if some low-cost producers are allowed duty-free access under CAFTA or other regional trade agreements?
- If TRQs were eliminated, would developing countries be forced to compete with the lowest-cost producers who now have a greater share of the market?
- Are preferential trade agreements just a stepping stone toward greater liberalization?
- What happens when powers are unequal? For example, what if CAFTA countries are more dependent on the United States than the United States is on CAFTA? What might this imbalance mean for labor and environmental standards?
- Why would the National Corn Growers Association choose to support CAFTA?
- If the U.S. price of sugar falls to about the world market price, will countries lose a large share of the U.S. domestic market? Some countries, like Australia, Brazil, South Africa, and Thailand, may be able to produce more and export more to make up for the price difference, but what will other countries do?
- If the U.S. market is deregulated and some developing and low-income countries no longer have the share of the U.S. market they depend on, what are some alternatives?
- What should TRQs be based on? Should they seek to maximize development opportunities in poor countries? If so, what criteria should selection be based on (for example, a country's per capita income)?
- How will other future trade agreements potentially affect low-income sugar-exporting countries?
- All WTO countries are able to use a safeguard clause within a trade agreement. The USTR (2005) explains this option as follows: "The [CAFTA] Agreement also

includes a mechanism that allows the United States, at its option, to provide some form of alternative compensation to CAFTA country exporters in place of sugar imports. That allows the United States to restrict imports eligible to enter under the CAFTA if the U.S. sugar program is threatened, and instead provide equivalent benefits to the CAFTA countries to make up for the lost access." The safeguard clause was developed to protect a country's market system, but because it requires compensation, it is seldom used in practice. Instead, subsidies and distorted trade agreements are often the norm to sustain a country's market system. What may be a more effective alternative to these current practices?

- Are tariff rates so high that they are prohibiting trade? In the case of TRQs that were meant to do away with direct quotas, the out-of-quota tariff rate is so high that for a sugar-exporting country, it is not worth sending sugar to the United States above its in-quota allotment.

- Are regional trade agreements just an easy way out for countries that do not want full liberalization of their market? Does the agreement mention further liberalization in the future? What countries are included in the trade agreement? It is possible that countries excluded from the agreement will also be hindered from future trade with countries within the free trade agreement. In other words, do free trade agreements divert trade away from nonmember countries?

- The rule of origin clause specifies the share of the total value of a commodity (such as raw materials) that must originate in either the exporting country or the importing country. This requirement can sometimes increase costs for developing countries, as they may be forced to buy raw materials from the United States at increased prices (rather than a nearby country that may produce materials at a much lower cost). Many times there are "cumbersome measures to verify that textiles/apparel are made locally and additional safeguard measures that limit the possible market access gains" (Third World Network 2005, 4).

- How many years will it take to reduce trade barriers and to reach the termination point of reduction at which market access remains constant? Is it the same for each country?

- Are proposed export and import levels under the new trade agreement significantly different from prior levels? Who is gaining access, and who is losing access to export markets? Why are some countries gaining a greater share of the market than others? Most important, what are export and import values based on? With sugar imports into the United States, for example, TRQ allotments are based on historical trading patterns during 1975–1981. This was a time of extremely high sugar prices; thus many countries included in sugar trade agreements with the United States are actually high-cost producers.

- Many free trade agreements state that the developing country must provide reciprocal market access to the partner country in the agreement. If reciprocal market access were required, what may be the impact on developing countries?

- In some trade agreements, "sensitive products" are excluded or contain different provisions from the rest of the trade agreement. For example, the Everything But Arms agreement between the European Union and least-developed countries provides duty-free access to EU markets, with the exception of bananas, sugar, and rice, which are undergoing alternative (and slower) phase-in periods. These products are considered sensitive because increased imports of these products have the greatest ability to disrupt domestic markets.

- How are labor and environmental standards clauses written? Some speculate that these trade agreement standards can actually become just another trade barrier, restricting the export of a good from a developing country. Although labor and environmental standards are extremely important, caution must be taken to make sure they are not being used as simply another impediment to trade.

Assignment

Your assignment is to develop a set of polices under CAFTA that will satisfy all stakeholders. Discuss the policy issues with regard to alternative import mechanisms under CAFTA and which stakeholders might support or resist these policies. Justify your recommendations, and assess the consequences for the stakeholder groups.

Additional Readings

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Chapter Thirteen
The Impact of U.S. Subsidies on West African Cotton Production (10-5)
by Andrea R. Woodward

Executive Summary

Cotton subsidies and their impact on international prices and on the livelihoods of poor African cotton farmers have become a central focus of the Doha Development Round of World Trade Organization (WTO) negotiations. Cotton subsidies have taken a high profile in part because cotton is a critical crop for some of the world's poorest countries, including the "Cotton 4" countries of Benin, Burkina Faso, Chad, and Mali. Another reason for this attention is that middle-income countries such as Brazil and China have a great deal at stake in cotton trade and much to gain through the elimination and reform of U.S. cotton subsidies.

Because of the prominent role cotton plays in the economies of "Cotton 4" countries, a small decline in cotton prices can make an enormous difference in the ability of their farmers to pay for health care, education, and food. A good price for cotton allows farmers to boost production of subsistence crops, slows urbanization by keeping people in rural areas, and creates localized wealth in rural places that need it most.

Opponents of the U.S. cotton subsidy program argue that it is trade distorting, because it results in at least a 10 percent reduction in global cotton prices. They also assert that it is a burden on U.S. taxpayers to keep afloat an inefficient industry that would not be profitable without subsidies. Advocates of the program argue that larger factors are at play in the world cotton price and that the impact of U.S. subsidies is negligible.

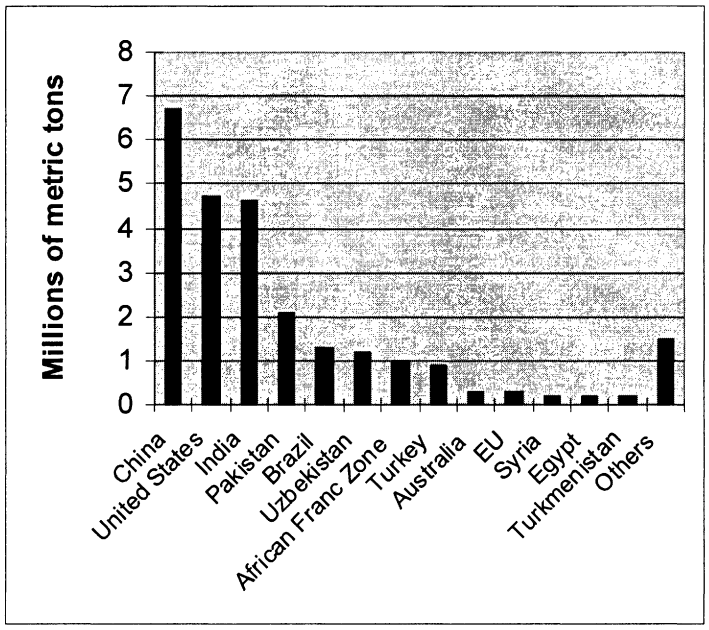
Cotton producers in the United States, West Africa, and middle-income cotton countries have a great deal at stake in the debate over subsidies. The WTO is also a major stakeholder, because some observers see cotton as a litmus test of whether or not the WTO is capable of serving the interests of less powerful countries and poor people. Important questions for all parties include who the real winners will be if subsidies are reformed or eliminated, what the alternatives are for cotton producers who cannot compete in the global market, and what kind of leverage the world's poorest producers might have in future trade negotiations.

Your assignment is to prepare cotton subsidy reommendations for the next U.S. farm bill that would be acceptable to all stakeholder groups. Discuss policy issues regarding support for and resistance to the recommendations, justify these recommendations, and assess the consequences for stakeholder groups.

Background

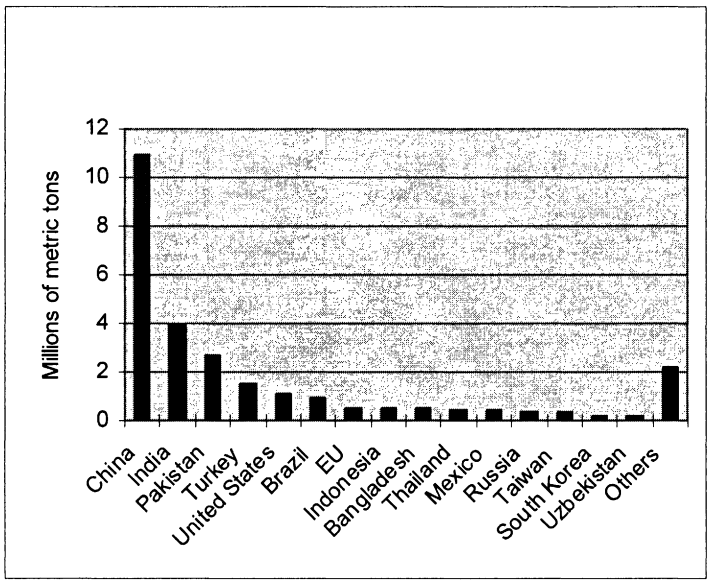
The Doha Round of trade negotiations, which aimed to redress the inequities of the Uruguay Round, called itself a development round and sought to place agriculture at the heart of the agenda. The negotiations collapsed in 2006 owing to intransigence on the part of the European Union (EU) and the United States regarding subsidies and tariffs. Even though cotton subsidies account for just 1 percent of agricultural subsidies in countries of the Organization for Economic Co-operation and Development (OECD), cotton is the commodity most often credited for unraveling negotiations, and its subsidies have served as a poster child for unfair trade practices worldwide (Heinisch 2006; Williams 2003). The inequities of trade policy in the cotton sector are most vividly illustrated in the plight of West African producers. In the "Cotton 4" countries of Benin, Burkina Faso, Chad, and Mali, gains from aid are overshadowed by losses in cotton trade due to current trade policies. The shares of people living on less than US$1 a day in Benin, Burkina Faso, and Mali are 41 percent, 27 percent, and 72 percent, respectively (World Bank 2006). The figure for Chad is not available, but this country ranked 173rd out of 177 countries on the 2003 United Nations Human Development Index (UNDP 2005). Given that these are four of the poorest countries in the world, their ability to compete in a global market with a commodity for which they have a significant comparative advantage is crucial for their development.

Figure 1: World Cotton Production, 2007



Source: Cotton Incorporated 2007.

Figure 2: World Cotton Consumption, 2007



Source: Cotton Incorporated 2007.

Francophone Africa's position in world cotton production, consumption, and trade—along with that of other regions around the world—is charted in Figures 1 through 3.[1] Figures 1 and 2 present worldwide production and consumption patterns. Francophone Africa is the world's seventh-largest producer of cotton, producing 4 percent of the world's total supply. The top five cotton-producing countries, along with their share of overall world production, are China (26 percent), the United States (19 percent), India (18 percent), Pakistan (8 percent), and Brazil (5 percent). The five largest consumers of cotton, along with their share of overall world consumption, are China (41 percent), India (15 percent), Pakistan (10 percent), Turkey (5 percent), and the United States (4 percent).

Figure 3 illustrates Francophone Africa's role in cotton trade compared with that of other cotton-exporting regions around the world. Francophone Africa produces approximately 10 percent of all cotton traded internationally, 22 percent of which is exported to the EU and 56 percent of which is exported to Asia. The United States produces about 40 percent of all exported cotton, providing 11 percent of its total exports to Turkey, 17 percent to Mexico, and 48 percent to Asia. Uzbekistan is also a major player in cotton markets. Like Francophone Africa, this country produces about 10 percent of the world's exported cotton, exporting 20 percent of its cotton to Europe and 37 percent to Asia. Australia and India each account for just over 2 percent of cotton exports, with the former sending 95 percent of its exports to Asia and 5 percent to Europe.

The Importance of Cotton in the West African Economy

For many years, cotton was considered the "white gold" of several West and Central African countries. The region's comparative advantage in the commodity is in large part what makes its farmers the most cost-efficient cotton producers in the world. Production costs for a farmer in Benin are estimated to be around US$0.30 per pound, whereas the cost for the average U.S. farmer is around US$0.68 per pound (ICAC 2001). Not only is labor cheaper in West Africa, but cotton produced there is also higher in quality because it is hand-picked and therefore "cleaner" than that picked mechanically.[2] Cotton in this region is also entirely rain fed, whereas 55 percent of cotton area in the rest of the world is irrigated (Estur 2005b). Because conditions in this part of the world are so amenable to cotton production, more than 10 million people now depend on the commodity for their livelihoods in West and Central Africa. Ninety-seven percent of West African cotton is exported, and the crop accounts for around one-third of total exports for both Benin and Burkina Faso (Estur 2005a). In Benin, approximately half of all households rely on cotton for a portion of their income. In Benin, Burkina Faso, Chad, Mali, and Togo, cotton is responsible for between 2 and 5 percent of gross domestic product (GDP) (Oxfam 2005). In comparison, the entire agriculture industry in the United States accounts for 2 percent of GDP, with cotton contributing 0.0004 percent of U.S. GDP (World Bank, cited in Oxfam 2005).

Because of the prominent role that cotton plays in many West and Central African countries, a small decline in cotton prices can make an enormous difference in the ability of these countries' farmers to pay for health care, education, and food. A good price for cotton allows farmers to boost production of subsistence crops. It also keeps rural people from fleeing to urban centers to find employment, and by creating localized wealth, it encourages development of locally based initiatives and activities (Caritas-CIDSE 2004). As might be expected, low prices have the opposite effect on rural cotton farmers. A study by the International Food Policy Research Institute (IFPRI) for the World Bank found that a 40 percent reduction in farm-level cotton prices leads to a 21 percent reduction in income and a 20 percent rise in poverty for cotton farmers (Minot and Daniels 2002).

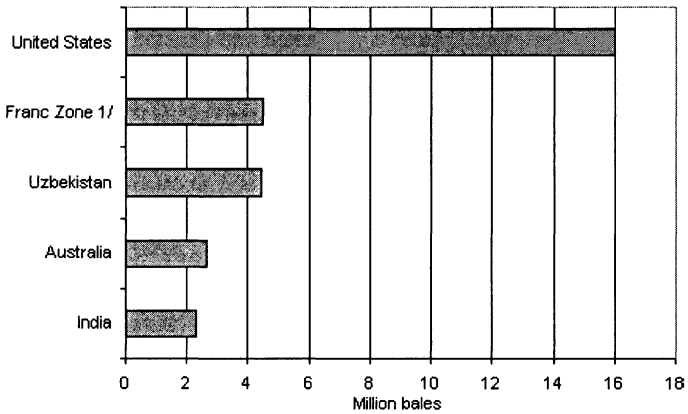
U.S. Cotton Production and Subsidy Program

The history of cotton production in the United State parallels that of other farm sectors, with a marked trend toward concentration of production occurring in the latter half of the 20th century.

[1] Although these figures include African countries outside of the "Cotton 4," the majority of African cotton exports come from these four countries.

[2] Although the quality of the fiber is superior to that of U.S. cotton, contamination during picking and storage "annihilates" this comparative advantage to the extent that the price of hand-picked cotton is discounted relative to machine-picked cotton. Some mills even refuse to buy manually harvested cotton to avoid complaints about low quality (Estur 2005a).

Figure 3: Leading Cotton Exporters, 2004–2006 (accounting for three-quarters of world trade)



1/ USDA reports cotton data for 10 of the 14 Franc Zone countries: Benin, Burkina Faso, Cameroon, Chad, Central African Republic, Cote d'Ivoire, Mali, Senegal, Togo, and Niger.
Source: USDA 2006.

In 1930 nearly one-third of the 6.3 million farms in the United States produced cotton. In that year 13 million bales of cotton were produced on 42 million acres. Seventy-five years later there were fewer than 25,000 cotton farms in the United States, and the crop reached a record of 23 million bales grown on 13.7 million acres (Estur 2005a). The high levels of cotton production in the United States have coincided with a downturn in domestic demand. As a result, cotton exports increased to 76 percent of production in 2003, which amounted to a 41 percent share of world exports.

This kind of production would not be possible without government assistance (see Box 1). Between 1998 and 2002, the United States spent US$14.8 billion to subsidize cotton valued at US$21.6 billion, and the U.S. Department of Agriculture estimates that without subsidies, the average U.S. cotton farmer would have lost US$871 for each acre of cotton planted from 1998 to 2004 (Oxfam 2004). Current subsidy levels were legislated in the 2002 Farm Bill, which guaranteed a minimum price of US$0.71 per pound to U.S. cotton producers. When the 2002 Farm Bill was passed, average world prices were around US$0.40 a pound, although prices have since risen to about US$0.57 per pound. The total amount of cotton subsidies distributed to producers in the crop year 2004/2005 was US$4.2 billion, which was also the estimated total value of the crop that year (Oxfam 2005).

Not all U.S. farmers are eligible for subsidies, and in fact most are not. According to the U.S. Department of Agriculture (USDA), 60 percent of all farmers and ranchers do not collect government subsidy payments, primarily because the crops and livestock they produce do not qualify for subsidy programs.[3] Among farmers who qualified for subsidies in 2004, 10 percent of the largest producers received 73 percent of all subsidies. Recipients in that category received an average of US$86,388 in annual payments, while the bottom 80 percent of recipients received only US$1,601 on average per year. The 22 top producers received more than US$1 million in subsidies (Environmental Working Group 2006). The disparities in subsidies reveal that the U.S. program not only disadvantages poor, small-scale farmers in developing countries, but also puts at risk the livelihoods of those kinds of farmers in the United States.

The most controversial subsidy program in the cotton sector is the "Step 2" cotton program, which cost taxpayers US$264 million in 2004. This program funnels tax money to U.S.-based cotton millers and exporters so they can buy domestically grown cotton instead of cheaper foreign cotton. These subsidies then allow this cotton to be exported (or "dumped") at prices that can be lower than the cost of production. The top 10 recipients

[3] For a list of the top subsidy recipients in the United States, visit http://www.ewg.org/farm/region.php?fips=00000.

of Step 2 subsidies in 2004 received 61 percent of the total paid out that year, with payments ranging from US$9 million to more than US$34 million for the largest cotton merchant, Allenburg Cotton Company of Cordova, Tennessee (Cook and Campbell 2005). The WTO ruled these Step 2 payments illegal in a case Brazil brought against the United States in 2004, and the United States has eliminated them, arguing that it is now in compliance with the panel ruling. Brazil is asking for further U.S. subsidy reform and has asked for a WTO compliance panel. (For more information on the case, see the case study "The WTO Dispute Settlement Mechanism: The Brazil–U.S. Cotton Case, by Fuzhi Cheng, in this series.)

Box 1: The U.S. Cotton Subsidy Program

U.S. government subsidies to cotton producers come in a variety of forms and have a wide range of purposes, including minimizing environmental impacts, providing disaster assistance, controlling pests, offering credit assistance, and subsidizing irrigation that provides water to Western states. The following list (adapted from Cross 2006) is not exhaustive, but it includes the kinds of subsidies most often referred to in debates over the U.S. subsidy program.

Marketing loan payments – Farmers use their crops as collateral for a loan from the U.S. Department of Agriculture's Commodity Credit Corporation (CCC). When the world price for cotton falls below the given loan rate, the borrower can repay the loan at the lower price and retain the difference.

Direct payments – These payments are generally tied to fixed, historical production levels and are an example of decoupled income support, meaning that they are not related to market price fluctuations or levels of production. They are therefore sometimes considered less trade distorting than other types of payments.

Countercyclical payments and emergency assistance – Countercyclical payments, based on historical production levels, are designed to protect farmers against a decline in prices and are triggered when the market price for cotton falls below a target price. They are decoupled from payments to offset low commodity prices.

Crop insurance – Insurance is provided through private insurers at a subsidized rate to protect farmers against losses caused by natural disasters. The USDA's Risk Management Agency pays more than 50 percent of the premiums and makes additional payments to the insurers for administrative costs. Any losses over the premiums are also paid by the government.

Export credit guarantees – A minimum of US$5.5 billion is made available by the CCC to provide government guarantees on the repayment of private loans to finance exporter sales of cotton and other commodities. These guarantees are intended to encourage exports of agricultural products to foreign countries where financing might not be available.

"Step 2" payments – These payments encourage buyers (like yarn and textile manufacturers and cotton exporters) to purchase U.S. cotton by providing a subsidy to do so when the lowest price for the cotton exceeds a benchmark price for Northern European cotton over a consecutive four-week period.

The End of the Multi-Fiber Arrangement

Cotton is one of the world's most important textile fibers, accounting for more than half of all the fibers used in clothing and household furnishings (ICAC 2004). West African countries—indeed the African continent as a whole—have been unable to play more than a marginal role in the market for value-added goods despite their share in the world cotton market. Although the cotton-producing countries in West Africa account for just 4 percent of world cotton production, roughly 90 percent of their crop is exported as raw fiber, thus making them a more significant player in global cotton trade (Adams 2006). The textile industry in Africa suffers owing to a number of factors, including a lack of qualified personnel and capital to finance investment, costly energy and transport, landlocked cotton-producing countries, a weak internal market, and competition from imports, particularly of second-hand clothing. The world textile market is also subject to a great deal of distortion, particularly in the world yarn market. All of these factors highlight the persistent importance of raw cotton exports for West African farmers (Estur 2005b).

Much of the market distortion in the world textile trade was due to the Multi-Fiber Arrangement (MFA), which later became the Agreement on Textiles and Clothing and was phased out between 1995 and 2005. This agreement effectively excluded Sub-Saharan African countries from the textile market, which comprises yarn and fabrics.[4] The degree to which the end of the agreement will help Sub-Saharan Africa, however, is seriously under question. Developing countries had believed that the phasing out of the MFA by January 1, 2005, would provide them with the opportunity to industrialize through textiles and apparel. These markets have been captured, however, by a few of the strongest developing countries, and most developing countries have been left on the sidelines.

Particularly in China, the demise of the MFA led to a massive increase in clothing exports to the EU and United States, both of whom reacted by imposing new import quotas. These new quotas were possible through a special provision, made when China joined the WTO in 2001, that allows countries to impose limits on textile imports until the end of 2008 if doing so will prevent market-disrupting surges. Accordingly, in June 2005 the EU signed an agreement to restrict the growth level of 10 categories of textile and clothing imports to between 8 and 12.5 percent annually until the end of 2007. In November 2005 the United States and China agreed to place quotas on 34 categories of Chinese textile and clothing imports beginning January 1, 2006. The quotas increase annually: 8–10 percent of U.S. textile imports can come from China in 2006, 10–16 percent in 2007, and 15–17 percent in 2008 (Hufbauer et al. 2006).

Policy Issues

Factors Affecting the World Market Price of Cotton

In its case against the United States at the WTO, Brazil asserted that world cotton prices would be 12.6 percent higher if certain U.S. farm programs were removed. The Food and Agriculture Organization of the United Nations (FAO) and the International Monetary Fund (IMF) both estimate the potential increase to be around 2 percent (USTR 2004). With the exceptions of 2003 and 2004, stocks over the past 10 years have remained relatively steady at more than 10 million tons. Over this same period the Cotlook Index has been declining and in 2006 was US$0.56 cents per pound (Cotlook 2006).[5]

Despite their demonstrated effects on cotton prices, subsidies are not the only external force at play concerning this issue. Additional factors having an adverse affect on global cotton prices include exchange rates, competition from less expensive synthetic fibers, China's decreasing consumption of and demand for cotton imports, the entrance of new producers in Brazil, Turkey, and Central Asia, and decreasing demand for commodities following the Asian economic crisis of 1997 (USTR 2004).

[4] For more information on the Multi-Fiber Arrangement, see the case study "The Termination of the International Agreement on Textiles and Clothing," by Jill S. Shemin, in this series.

[5] The Cotlook A Index is the average of the cheapest five quotations from a selection of the main internationally traded upland cottons. Using this average is a means of identifying the growths that are the most competitive and therefore the likeliest to be traded in the most volume. This practice is a proxy for weighting, because the absence of timely data by which weighting could be calculated makes it impractical (Cotlook 2006).

Non-U.S. Cotton Subsidies

The United States is not the only country whose cotton subsidies have deleterious effects on the viability of West African cotton farmers. Although the EU is not as large a player in the global cotton market, more than 100,000 cotton farmers in Greece, Portugal, and Spain receive nearly US$1 billion in subsidies every year. Because the EU is Africa's largest trading partner, its subsidies are particularly harmful for Sub-Saharan African farmers, who are cut off from the self-sufficient European cotton market. Although the EU does not export cotton, its production still results in downward pressure on prices by contributing to increasing global supply. Cotton farming in the EU occurs in lower-income regions, and those regions often offer few economically attractively alternatives to cotton production. The EU thus sees its cotton income and support program as a justified mechanism to help small, low-income producers who have an average farm size of just over 12 acres and a limited impact on the world cotton market. The EU has undertaken a reform of its cotton subsidies, although the legality of this reform was challenged in a recent European Court of Justice opinion.

As the world's largest producer and importer of cotton, China's role in cotton trade is monumental and growing. Despite the country's high levels of production, China's growing textile sector requires more cotton than the country produces. Although China's consumption of cotton has been increasing steadily since 1970, production has been volatile. In 2003 stocks were exhausted entirely when consumption surpassed production by almost 2 million tons.

The Political Economy of Trade

In July 2006 the Doha Round of WTO collapsed after five years of negotiations. This round was intended to make globalization more inclusive of the world's poorest countries by reducing subsidies, tariffs, quotas, and other barriers to trade erected by more developed countries. The EU and the United States could not agree on the specifics of those reductions: the United States argued that the EU was not doing enough about tariffs, and the EU asserted that the United States was not serious about reducing its subsidies. Genuine differences about whether the interests of the poor are best served by lower tariffs or more special protection contributed to the impasse. A larger factor at play, however, was the powerful influence of lobbies.

Farmers and rural sectors enjoy a great deal of cultural and political support in nearly all countries. With large-scale producers entering the picture over the past few decades, popular support has been reinforced by powerful political lobbies from industry and agribusiness. Nonetheless, direct payments to farmers that are tied to production, along with high retail prices supported by trade barriers, are losing legitimacy and credibility in the public sphere. Even though negotiations to reduce government measures in agriculture involve complex trade-offs, pressure is increasing to level the playing field as subsides continue to garner international attention.

The end of the Doha Round may lead to growth in bilateral trade negotiations, which work to the disadvantage of poorer and less powerful countries. In bilateral negotiations they are no longer able to work collectively and increase their leverage in negotiations with countries such as the United States.

One of the obstacles to addressing the cotton issue is that it is difficult to negotiate agricultural subsidies country by country, and it is nearly impossible to reduce payments for one commodity without also reducing payments for other commodities (Townsend 2003).

National-Level Factors in West African Countries

Because farming is a high-risk investment, governments need to be able to provide safety nets for their farmers when events such as crop failure, unpredictable weather, volatile markets, or related situations arise. Developing countries' ability to provide such support is limited by agricultural marketing reforms that liberalized markets by reducing or eliminating subsidies on agricultural inputs like fertilizers and credit.

Another national-level factor at play in the West African cotton industry is the colonial legacy of a monopolistic, parastatal ginning and marketing system, which generates low revenue for cotton farmers. The system was originally designed to provide a fully integrated supply and marketing chain and provide for vital support services, such as research, extension, and infrastructure. At the behest of the World Bank and the IMF, a number

of West African countries undertook reforms of the parastatal regimes, but the outcomes to date have been mixed. Now the system is sometimes seen as failing to serve the best interests of farmers and failing to provide competitive markets for their cotton production (Kherallah et al. 2002).

Stakeholders

West African Producers and Governments

In the crop year 2002, the United States government's cotton subsidies totaled US$3.4 billion. This figure is nearly twice the total U.S. foreign aid given to Sub-Saharan Africa, and it is more than the combined GDP of the main cotton-producing countries in the region: Benin, Burkina Faso, and Chad (Oxfam 2004, 5). The losses these and other African countries incur owing to U.S. cotton subsidies undermine the aid that they receive. For example, in 2002 Burkina Faso received US$10 million in U.S. aid and Chad received US$5.7 million, but each country lost nearly US$13.7 million in export earnings. Togo received US$4 million in U.S. aid, but lost almost twice that much in export earnings (Oxfam 2004). These losses in export revenue due to U.S. cotton subsidies also affect the ability of indebted countries to repay their debts. In 2002 the revenue losses for Benin, Burkina Faso, Chad, and Mali equaled between 21 and 33 percent of their total debt service payments.

In response to these kinds of losses, these same four countries led a West African initiative calling for an end to U.S. subsidies at Cancún in 2003. The ministers from these countries insisted that they were not asking for special treatment, but rather for wealthy countries to play by the same fair-trade rules they impose on others—not just the ones that operate in their favor. The outcome of this West African initiative, also known as the C-4 or cotton sectoral initiative, came to be seen as a litmus test of how far wealthy WTO members were prepared to go to put the Doha Round's development principles into practice. When the talks at Cancún ended, cotton was considered by many to be the main issue over which they unraveled (Williams 2003).

The U.S. proposal at Cancún was rejected by the EU, Japan, and developing countries on the grounds that the export subsidies it would eliminate were not used extensively by the United States; the lower tariffs it called for would hurt developing countries; and the production subsidies it would reduce would not affect the fixed payments that provide U.S. growers with approximately one-third of their total support. Likewise, the United States and the developing countries found the EU's proposal unacceptable, arguing that it would not reduce total support for agriculture and would result in only modest reductions in drect support to production and trade (Townsend 2003).

West African governments have an important stake in what happens regarding subsidies as well. For some countries where cotton is the major agricultural export commodity, their decision to participate in the WTO is significantly linked to how decisions at the WTO facilitate sustainable cotton production and profitable participation in international trade. What is more, while these governments are already burdened with debt payments that make up a substantial percentage of their GDP, they are faced with the additional strain of supporting farmers unable to get a good price for their cotton owing to overproduction made possible by subsidies in the West. In 2001 the governments of Benin and Mali spent US$20 million and US$14 million respectively averting a collapse of their cotton sectors by putting a price floor under the cotton market. IMF structural adjustment programs further reduce the leverage governments have to deal with the cotton situation. In 2002 the IMF would not allow the Beninese government to provide subsidies to its farmers, saying that doing so would breach fiscal deficit reduction targets. In Mali the World Bank required the government to reduce its producer price as a condition for adjustment loans (Oxfam 2004).

The U.S. Government and Producers

According to the Office of the U.S. Trade Representative (USTR), U.S. farm programs do not distort trade, cause low cotton prices, or hurt foreign growers. To support its case, the USTR points out that cotton prices actually increased during the two years following the 2002 Farm Bill and that U.S. cotton production and consumption have remained stable and even declined in recent years. Farmers are responding to market signals, as evidenced by the fact that they change cotton acreage from year to year, as farmers in the rest of the world do, and they base planting decisions in the spring on price projections for the fall.

The United States, which is the largest retail market for cotton, and the EU, which is the largest import market for textiles, assert that as net importers of cotton they are both helping to sustain the world cotton market. Additionally, U.S. industry and government contribute approximately US$60 million per year in domestic and international cotton market development efforts. These efforts, which began in the 1950s, may boost world demand for cotton by more than subsidies boost U.S. production (Townsend 2003).

The WTO

The WTO has a great deal at stake in the outcome of cotton subsidy disputes. A report by Oxfam argues that cotton is a litmus test of whether or not the WTO—and trade itself—can in fact serve the interests of less powerful countries and poor people. If the WTO is to prove that it is capable of creating opportunities and removing distortions in global trade, it must be able to show effective leadership in the cotton sector. According to Mali's trade minister, Choquel Maiga, "The credibility of the world trading system depends on resolving the cotton problem" (quoted in Williams 2003, 21). Cross (2006, 188) states, "It cannot be assumed that developing countries will continue to participate in a WTO that is perceived to be inequitable."

Middle-Income Cotton-Producing Countries

If the United States were to reduce or eliminate its subsidies, Brazil would arguably gain the most in terms of increased exports (Pan et al. 2005). Efficiency, higher yields, and scale of production position the country to expand its role in markets where subsidized U.S. cotton dominates. With effective crop management and advances in agricultural technology, Brazil has gone from being a net cotton importer to a net cotton exporter in less than a decade, recently overtaking Turkey and Uzbekistan to become the world's fifth-largest cotton producer. Most of the growth in cotton production has occurred at large plantations in the central west region as well as in the northeast, where cotton acreage has doubled every year since 2002 and is now expanding faster than acreage of soybeans, Brazil's leading agricultural export (Benson 2004). In 2004 the Brazilian Association of Cotton Producers projected that without U.S. cotton subsidies, the country could double its cotton production in just two years. Brazil's potential to become a bigger cotton exporter is boosted not only by favorable technology and infrastructure, but also by the estimated 200 million acres available for planting (Benson 2004).

Policy Options

Hasten Elimination of Step 2 and Export Subsidies and Reform Other Subsidies

Aside from eliminating Step 2 subsidies, the United States has made no change in its marketing loan or countercyclical programs, which were named by the WTO panel as two of the three subsidies causing significant price suppression. The current support structure for U.S. cotton farmers is guaranteed by the current U.S. Farm Bill through August 2007. The current administration has indicated its intent to work with Congress to reduce cotton subsidies, and pressure to do so has increased owing to the rising cost of support, requirements of global agreements, and the rising levels of global awareness and criticism of the impact of subsidies on farmers in developing countries. A poll by the Program on International Policy Attitudes (PIPA) determined that "public attitudes on agricultural subsidies in the U.S. are very much at odds with the U.S. policies" (PIPA, cited in Heinisch 2006, 269). A majority (77 percent) of people polled favored subsidies for small farmers but opposed them (65 percent) for large farmers. The report concludes that "the scope of subsidies the public supports is so much narrower than is currently provided that, if the public's preferences were followed, this would largely remove the current obstacle in trade negotiations" (PIPA, cited in Heinisch 2006, 269).

Retribution against the United States

Brazil's successful case against the United States in the WTO may be signaling a broader shift within the WTO away from a system dominated by OECD countries toward a system that is increasingly influenced by middle-income countries (Cross 2006). Because of a number of political and economic factors, least-developed countries (LDCs) are not positioned to confront wealthy countries in the way that Brazil has been able to with its stronger economy. As Brazil's foreign minister Celso Amorim has stated, however, there may be a new "multipolar" dynamic at work within the WTO. An important question to consider is whether such a shift in power dynamics can work to the advantage

of LDCs, whether or not their interests in a particular situation coincide with those of stronger middle-income countries.

An Agreement on an International System of Cotton Supply Management

Suppan (2006) lists an international agreement on cotton supply management as an important option for achieving stable and remunerative prices. The lack of any international supply or production management mechanism for cotton will continue to result in structural oversupply and low prices. Low prices encourage farmers to boost production at any cost, resulting in environmentally unsustainable methods. The Agreement on Agriculture does not adequately address this cycle of structural oversupply, depressed prices, and environmentally unsustainable increases in cotton exports (Suppan 2006).

Diversify Production

Interviews with farmers in the "Cotton 4" countries have revealed that many would prefer to replace cotton with other crops, but this option is not realistic because no other cash crops have the infrastructure that has been developed around the cotton sector. Additionally, the opportunities for growth that globalization promises have yet to be seen in these countries, as their economies are considered to have little to offer private investors (Decalo and Boudon 1997 cited in Heinisch 2006). The Cotton 4 countries have invested heavily in cotton to bring them out of poverty and keep their economies stable, and the geographic location of the Sahel limits the kinds of crops that can be grown.

Assignment

Your assignment is to prepare cotton subsidy recommendations for the next U.S. farm bill that would be acceptable to all stakeholder groups. Discuss policy issues regarding support for and resistance to the recommendations, justify these recommendations, and assess the consequences for stakeholder groups.

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Chapter Fourteen
Trade Liberalization in South Korea's Rice Sector: Some Policy Implications (10-6)

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Executive Summary

The tension between the liberalizing agenda of the World Trade Organzation (WTO) and the policies of industrial-country members of the WTO has been framed as a battle between developed countries and less-developed countries. In this contentious arena, one of the charges persistently brought against South Korea is that its domestic support policies distort the distribution of potential trade benefits that would be generated by access to its domestic rice market. This market is considerable, as South Korea, along with Japan, is one of the world's biggest consumers of *japonica* or short-grain rice.

The issue of domestic support for rice has been central to the dialogue on South Korea's trade policy since the 1994 Uruguay Round of the WTO, when South Korea committed to liberalizing a large share of its agricultural and fisheries markets by 1997 and its staple foods market, including rice, by 2004. Within a decade national imports of rice increased from 51,000 tons to 205,000 tons, and in 2006 Korea signed an agreement with the Association of Southeast Asian Nations (ASEAN) to double imports over the next 10 years without compensating for farmers' income losses. But trade advocates still criticize these steps as a deferral of full liberalization.

At the same time, Korean farmers and civil society groups have charged that these measures reduce the nation's primary staple grain to a tradable commodity and threaten the livelihoods of Korea's historically significant base of farmers. Public demonstrations to block the passage of parliamentary votes on free trade agreements have become frequent occurrences in the national arena, and Korean farmers have linked up with the global food sovereignty movement in visible solidarity actions at the site of WTO ministerial meetings.

Trade in rice is clearly a politically charged debate in South Korea, intersecting discussions of national food sovereignty, rural development, and cultural and social identity. The country's high dependence on manufacturing exports and its high protection in the rice sector present a major dilemma within the government's trade agenda. This situation is further complicated by Korea's sidestepping of the multilateral bargaining table in pursuit of bilateral free trade agreements (FTAs) and regional agreements within the Asia-Pacific Economic Cooperation (APEC) forum and with ASEAN members. As of 2006, Korea had pursued FTAs with Canada, China, the European Union, Japan, Mexico, Singapore, and the United States. But agricultural trade issues still figure prominently in pending discussions with China, ASEAN, and the United States, all of which also export rice. Evidently, the primary benefit to Korea in these agreements is increased market access for its manufacturing and industrial sector.

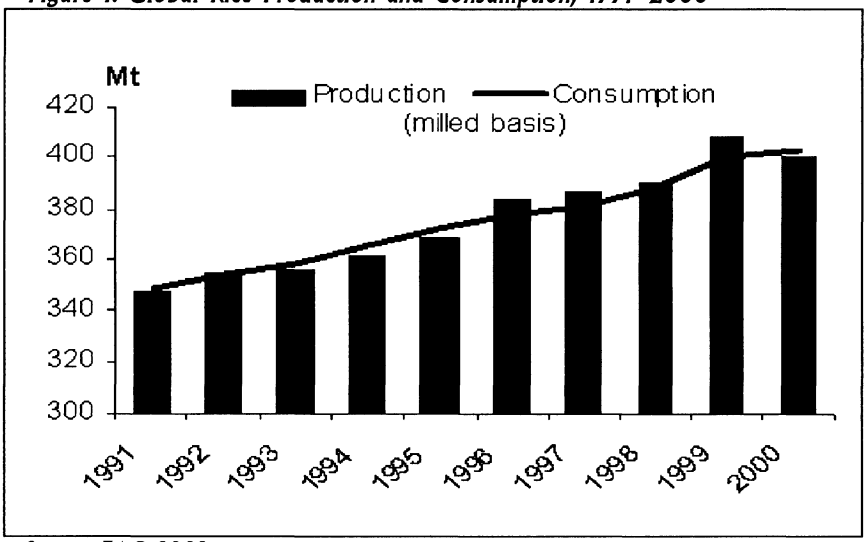
Your assignment is to suggest a long-term plan for the South Korean government that will address the international trade issues as well as the nation's food needs and the future viability of the farming sector. With food aid to the Democratic People's Republic of Korea still a pressing humanitarian need, propose an economic and political agenda for engaging in partnership with this country. What would a sustainable solution to these various trade and aid issues look like?

Background

The Global Context

Rice is an important agricultural commodity that dominates world agricultural production and consumption. According to FAO (2002), 90 percent of global rice consumption and production takes place in Asia, and within this region, rice makes up nearly 40 percent of food consumption. Most rice producers in the world are small-scale farmers with

Figure 1: Global Rice Production and Consumption, 1991–2000



Source: FAO 2002.

landholdings of less than one hectare. Global rice consumption and production increased significantly during the 1990s (Figure 1).

Despite the importance of rice as a basic food staple, especially in developing countries, rice trade accounts for only 6.5 percent of consumption (Wailes 2004). This low share of traded rice in consumption is due partly to preferences for specific types and grades of rice, but also to protective agricultural policies. According to a World Bank report, the average trade-weighted global tariff for rice was 43 percent in 2000, and the complete figures on rice farmer support in Asia reveal consistent state support across the board (Beghin and Aksoy 2003). In addition to tariffs, nontariff measures (such as quotas) are very important. Among rice producers, South Korea, along with Japan and Taiwan, provides much higher levels of protection for its rice sector than other countries in South and Southeast Asia. In some of these Asian countries, the protective measures have been tied to food self-sufficiency agendas.[1]

The rice type most relevant to South Korea's market—medium or short-grain rice—is the most protected in the world rice trade. Wailes (2004) found that owing to the policies of Japan, South Korea, and Taiwan, world export prices are approximately half of what they would be on an openly traded market. The same study predicts that complete liberalization in medium-grain rice would increase trade by 73 percent, and in the most protected countries, such as South Korea, trade would increase by more than 140 percent. Similarly, forecasts based on the Uruguay Round effects for 2005 predicted that rice liberalization would boost exports by 147 percent (Anderson et al. 1996). Beyond the volume of trade, the potential price increase on the world market may be as high as 90 percent for this grain variety (Beghin and Aksoy 2003). The countries that would stand to gain from this increased trade include China, the United States, and, to a lesser extent, Thailand and Vietnam. The net social welfare benefit from the liberalization of rice trade has been estimated to be US$7.4 billion a year (Wailes 2004).

Agriculture in South Korea

Since 1948 South Korea has transitioned rapidly from being a primarily agrarian economy to one dominated by manufacturing industry. Agriculture's share of the country's national income dropped from about 50 percent during the 1950s to about 3 percent today.

South Korea today is considered an upper-middle-income country. It ranked 12th in the world in

[1] Another important argument made to protect agriculture is the sector's "multifunctionality" and the value of ecosystem services (see Oh et al. 2001 for the literature for South Korea on this subject).

terms of total gross domestic product (GDP) in 2005 (World Bank 2006). The change from a poor to a well-off country, which occurred in the span of two decades, has given rise to a shift in which major exports are in the manufacturing, electronics, and chemical industries. Its trade policy, and therefore its relationship with the WTO, is motivated by the drive to increase market access for commodities such as automobiles and electronic products (MOFAT 2005).

South Korea's comparative advantage does not lie in agricultural production. Only 17 percent of its total land area is arable, and the average farm size is about two hectares (KNSO 2005). Furthermore, the nation has long been one of the most densely populated places in the world, with 48.2 million people. As a peninsular land mass, Korea is buffeted on a yearly basis by increasingly serious typhoons, hurricanes, and other natural disasters during the period when most crops become ready for harvesting, resulting in irreparable damage and loss for the nation's farmers (MAF 2005). Finally, owing to climatic conditions in South Korea, staple foods such as rice have only one growing season per year. In 2003, for instance, the harvest dropped to a 23-year low owing to weather conditions, and South Korea could not meet the minimum food security stock amount recommended by the Food and Agriculture Organization of the United Nations (FAO) that year or give its annual 400,000 tons of rice as food aid to North Korea.

A Brief History of Domestic Rice Policies

The foundation of South Korea's rice support policy lies in the process of state-led industrialization as well as in its prewar colonial history. South Korea's support policies may be organized into two major periods of government intervention, based on the foundation of a comprehensive land reform that established the small-scale family farm as the basic unit of production. The two distinct phases of agricultural policy may be described as (1) the developmental period between 1950 and 1970, in which policies were weighted toward providing cheap food for the growing urban labor force and driving national industrialization, and (2) policies to stabilize the rural sector and bring more parity to rural and urban incomes from the 1970s on. Since 1968 Korea's agricultural policies have been motivated by two main purported objectives: food self-sufficiency for major food crops and livestock products, and the reduction of the gap between rural and urban incomes (Evans 1991). Toward these aims, the government has pursued state trading, import quotas and tariffs, producer price supports, and retail price ceilings for various commodities (Evans 1991).

From the end of the colonial period in 1945 until the 1960s, the state protected and developed its manufacturing industry while taxing the agricultural sector (Anderson 1989). The government purchase prices for agricultural products did not cover production costs until 1961, when the level of agricultural protection began to be increased. In the 1960s the government switched to a policy of production support, motivated by the military dictatorship's political strategy of attempting to gain legitimacy and rural support, but this support still amounted to less than market prices (Abelmann 1996). From the 1980s until the mid-1990s, the main agricultural support pertaining to rice was the "double-price" policy, in which the government protected both producer and consumer welfare by buying rice from farmers at higher than international market prices and selling it to consumers below the government's purchase price (Anderson 1989). The government purchased about 20 percent of the total crop, and the purchases were allocated according to historical production figures for each region, village, and farm. The government used this rice for its military and other government requirements or sold the rice back at domestic market prices.

Rice imports, a highly controversial issue in South Korea, were essentially banned for more than a decade before the Uruguay Round Agreement on Agriculture (URAA). In the URAA, South Korea agreed to a progressively increased minimum market access (MMA) import regime. The URAA required that in 1995 South Korea import the equivalent of 1 percent of average consumption for the years 1988–1990 (51,307 metric tons [MT]), increasing that amount to 4 percent by 2004 (205,228 MT). In addition, there was a 5 percent tariff on permitted imports, and rice trade remained strictly under government control during the 10-year grace period.

According to the URAA, the replacement of the MMA was to be negotiated with South Korea's trading partners before December 31, 2004. Negotiations continued through much of 2004 and culminated in an agreement just before the deadline, setting the rules for Korean rice imports for 2005–2014. Under the agreement the minimum-access import quota will almost double in size by

2014, but there is no provision for imports above the quota. The tariff within the quota remains at 5 percent. The South Korean government is committed to resell a portion of the imported rice into the Korean market with an allowed markup on the price.[2]

The minimum import quota for 2005–2014 is divided into two sections. One section, consisting of the 205,228 MT quota size reached in 2004, is to be divided each year among four exporting countries: China (116,159 MT), the United States (50,076 MT), Thailand (29,963 MT), and Australia (9,030 MT) (all on a milled basis). A second section, consisting of the increments added to the quota each year from 2005 to 2014, is open to exporters on a most-favored-nation (MFN) basis, so that exporters in any country that has MFN standing with South Korea can try to sell rice within the quota. The initial MFN section of the quota in 2005 was 20,347 MT, and the quota increases by 20,347 MT each year thereafter, until the total quota size is 408,700 MT, with the MFN section equal to 203,472 tons in 2014.

Policy Issues

Dependency of Rice Farmers

In 2003 rice constituted about 27 percent of total South Korean agricultural production, three times more than the next largest category (pig), even as paddy land dedicated to this crop has declined since a high in 1988 (MAF 2005).[3] This dominance is also reflected in farmers' livelihood dependence on rice: in 2001, 41 percent of average farm income came from rice, making it the primary source of income (MAF 2005). According to national statistics, despite the decline of paddy field area, rice cultivation area per farm household expanded from 0.66 hectare in 1980 to 1.08 hectares in 2003, and rice yields per hectare have steadily improved during this period.

The government's policies from the 1970s on have directly shaped the priorities of farmers. Rice producers have constituted the majority of producers receiving state support (Evans 1991). In the years immediately before 1990, rice producers received 90 percent of their state support from price intervention policies. In 2000 WTO database information on support for commodities revealed that South Korea spent nearly US$1.5 billion on market price support for rice, compared with US$64 million for the next-largest category, fruits and vegetables (WTO 2004). Between 1985 and 2000 the rice price to the consumer increased by 156.6 percent, matching the overall government purchasing price increase of 154.4 percent. According to the WTO, consumers in South Korea paid three times the world price for rice (WTO 2004).

It is important to note that the market price support for rice is a trade-distorting "amber box" measure subject to reduction commitments under the URAA.[4] Like many developing- and developed-country members of the WTO, South Korea has promised to move more of the "amber box" subsidies into the unlimited "green box" supports.[5] According to the Ministry of Agriculture and Forestry, the government will opt out of government purchases and begin to pursue a selective direct payment program in order to stabilize farm income as well as encourage the development of off-farm income sources (MAF 2005). This measure lies within the green box of the URAA. As Table 1 shows, total rice production fell from 1985 to 2003, and the share of rice purchased by the government dropped from roughly 20 percent to 10 percent (MAF 2005). Meanwhile, in terms of productivity per hectare, the Ministry of Agriculture and Forestry found that the rice yield per tenth of a hectare had increased from 356 kilograms (kg) in 1985 to 516 kg by 2001 (MAF 2005).

[2] Japan is pursuing the same policy. The government's intention in conducting trade and managing the domestic market instead of leaving trade to the private sector is, presumably, to avoid sharp price declines and to provide some protection to rice farmers.

[3] The government policy of raising rice prices in the domestic market contributed to maintaining the importance of rice in the economy. At world market prices, however, the share of rice in agricultural production and GDP would be much smaller.

[4] The "amber box," an expression that developed during the General Agreement on Tariffs and Trade (GATT) negotiations, uses a traffic light analogy to rank policies. According to this analogy, an amber box policy is subject to careful review and reduction over time. Amber box policies include market price support, non-exempt direct payments, and input subsidies.

[5] The "green box" describes domestic support policies that are not subject to reduction commitments under the Agreement on Agriculture. These policies are assumed to affect trade minimally and include direct payments, research, extension, food security stocks, disaster payments, and structural adjustment programs.

Table 1: Government Purchase of Rice, 1985–2003 (thousands of metric tons)

Indicator	1985	1990	1995	2000	2001	2002	2003
Rice production (A)	5,626	5,606	4,695	5,291	5,515	4,927	4,451
Government purchase (B)	1,153	1,203	792	456	416	397	472
B/A (%)	20.5	21.5	16.9	8.6	7.5	8.1	10.6

Source: MAF 2005.

Rice Self-Sufficiency

The goal of food self-sufficiency can be traced to the agricultural structure of imperial Japan during its occupation of the Korean peninsula (1910–1945). In the colonial period, Japan's own self-sufficiency goals for rice protected the rice sector in the Korean and Taiwanese colony from world prices (Anderson 1989). Owing to Japan's extensive investment in the rice sector, Korea's level of rice production and exports increased significantly. At the same time, however, annual rice consumption by Koreans fell by a third because the native population could not afford it, whereas Japanese consumers maintained their average consumption levels (Anderson 1989). This period of deprivation, as well as the memories of the food shortage caused by the subsequent war (1950–1953) and reconstruction period (1950s and 1960s), still figure in the national interest in food self-sufficiency.

By 2004 the Ministry of Agriculture and Forestry reported that the goal of 100 percent rice self-sufficiency had been reached (Table 2). This self-sufficiency figure reflects the fact that domestic demand for rice has decreased.[6] This drop is attributed to the increased growth of national income as well as the diversification of the national diet owing to urbanization and exposure to Western food habits (MAF 2005). The self-sufficiency achievement has also been dependent on the import and intensive use of chemical inputs such as fertilizer.

Domestic Support and WTO Commitments

South Korea has fully implemented its multilateral commitments on agriculture and provides assistance well within WTO obligations (WTO 2004). Nonetheless, South Korean agriculture receives high support and has low levels of market orientation. Producer support—as measured by the producer support estimate (PSE) of the Organization for Economic Cooperation and Development (OECD)—was 60 percent in 2003, down from 68 percent in 2002, and almost double the OECD average of 32 percent. The decline was due mainly to steep rises in world prices for several commodities. Support levels are as high as 74 percent for rice and 89 percent for oilseeds.

South Korea's total agricultural support (net of specific sectoral budget receipts) of US$20.4 billion in 2003 and its share of GDP, at 3.9 percent, were among the highest among OECD members. More than 90 percent of assistance is market price support (US$15.5 billion in 2003), paid for by consumers through higher prices. In 2003 total transfers from consumers (including on imports) amounted to US$20.3 billion. The support measures more than doubled producers' gross farm receipts on average (giving them the equivalent of US$16.9 billion additional income). Such high levels of support within its WTO commitments suggests that multilateral disciplines have done little to reform South Korea's farm policies, and considerable scope exists to increase assistance without exceeding commitments.

[6] Per capita consumption of milled rice increased from 100 kg a year in 1961 to 135 kg in 1980. Since then per capita consumption has been declining. The present level of consumption is about 80 kg per capita annually (MAF 2005).

Table 2: Food Self-Sufficiency Figures for Major Grains, 1975–2003

	Self-sufficiency (percentage)				
Year	Rice	Barley	Wheat	Soybeans	Corn
1975–1979	96	96	3	66	6
1980–1984	88	100	3	29	4
1985	71.6	63.7	0.4	22.5	4.1
2003	100.0	49.7	0.3	7.3	0.8

Source: MAF 2005.

Food Aid to North Korea

One important element that is usually not presented within the global trade debates lies beyond South Korea's border to the north, in the decade-long food shortage of North Korea. South Korea is the largest nation-state donor of direct food aid to North Korea. This aid linkage between North and South Korea is increasingly informed by policies aimed at the gradual economic and political integration of North and South Korea. North Korea's future food needs are perhaps the most important and least understood element of food security in relation to South Korea. South Korea's rice policy is not only aimed at domestic consumption, but also an important element of a food aid program to North Korea.[7]

South Korea's sense of responsibility for its northern neighbor must also be understood in the context of less than enthusiastic food donations from Western countries to North Korea in the wake of that country's famine in the early 1990s and subsequent food crises. For example, in response to North Korea's request for food aid during a then-unpublicized famine of 1995, assessments of total need by both the World Food Programme (WFP) and the Food and Agriculture Organization of the United Nations (FAO) were underreported because of the conviction that few donors would commit these amounts as a result of tenuous foreign relations with North Korea. This food shortage amounted to nearly 50 percent of the country's food requirements (Natsios 2001). At this scale, the deficit of needed food was greater than the one that led to the 1985 Ethiopian crisis, which killed a million people. Mortality figures from the famine of the 1990s range widely. U.S. Congressional staffers who visited the country concluded that from 1995 to 1998 between 900,000 and 2.4 million people had died from starvation or hunger-related illnesses, with deaths peaking in 1997. By extrapolating from interviews with refugees in China and observations on the ground, some nongovernmental organizations (NGOs) produced estimates of famine-related deaths on the order of 2.8–3.5 million (Noland et al. 2001).

North Korea's food insecurity has a complex and contested lineage and cannot be detailed in full here. The need for food aid or imports is due in part to the lack of arable land and the limited yield increases. Only about 15 percent of North Korea's land is arable, and it ranks near the top 10 countries that have the lowest ratios of arable land per person (Ahn 2005). By comparison, the U.S. ratio is six times that of North Korea. The country's arable land capacity has been further reduced owing to a combination of natural disasters, such as flooding, and human-induced soil degradation resulting from environmentally damaging agricultural policies and practices (Ahn 2005; Noland et al. 2001). Multiple reports suggest that agricultural production may have peaked in 1989 but has since declined (Noland et al. 2001), with the exception of an improved harvest in 2003 (Ahn 2005).

With relatively few sources of foreign exchange and curtailed possibilities for trade due to sanctions, North Korea will continue to depend on food aid for the near future (Ahn 2005). This need

[7] It should be noted that South Korea does not need to rely on domestic production to provide food aid to North Korea. The government can import low-cost rice from Vietnam or India and export it as food aid to North Korea. North Koreans consume *indica* rice (which the South Koreans used to consume when per capita income was low until the early 1970s), so Vietnamese or Indian rice would pose no problem for consumer acceptance.

is estimated to amount to 1 million metric tons of food aid per year. The WFP estimates that an average North Korean's guaranteed diet is about 280 grams of cereals a day, although the internationally recommended minimum is 550 to 590 grams a day, with the condition that this is part of a nutritionally balanced diet.

But why does South Korea have a special role in this situation? For one, helping North Korea to meet its food deficit through direct food aid is important for the security of South Korea and an important element of South Korea's strategy of maintaining peace on the peninsula. North Korea has substantial military might, and starvation of its people may provoke the government of North to attack the South. The South Korean government must take this concern seriously in formulating its foreign policy.

Furthermore, the security concerns of many donor states about North Korea's nuclear program significantly temper the amount of aid they allot (Natsios 2001). Research has shown that much food aid has been motivated by donors' non-famine-related foreign policy aims. Some question the sustainability of this approach because of the dependence and variability that stem from the conditions accompanying these diplomatic negotiations (Noland et al. 2001). This conditionality is especially true in the case of United Nations (UN) donations in comparison with South Korea's. In 1995 South Korea's response to the famine was a public offer of unconditional food aid, whereas the UN negotiated multiple political concessions via the United States in exchange for food aid.

Although UN organizations, primarily through the WFP, have been the largest donors of food aid to North Korea, the second-largest category of aid giver has consisted of individual countries, and South Korea has given the most direct aid of any country, accounting for nearly 30 percent of aid from the international community (Ahn 2005). This contribution has been rising in recent years. During the 1995–2001 period, South Korea's aid amounted to US$450 million, whereas the international community donated US$989 million in the same period, or a little more than double South Korea's contribution (Ahn 2005). Since 2001, food aid donations to North Korea have dropped significantly. According to the WPF, North Korea needs US$171.2 million in food aid, but by late 2004 only 54 percent of this need had been met (Ahn 2005). The United States, one of the largest aid donors, decreased its donations by 80 percent after 2001 (Watts 2004).

Rural Depopulation and the Rural Elderly

A brief statistical overview of the farming sector in South Korea shows a picture of a population in decline. In 2003 the farming population was about 3.5 million, or 7.4 percent of the total population, a 17 percent decline since 1995 (MAF 2005). Owing to rapid rural depopulation and the lack of entrants into the agricultural sector and communities, the average age of South Korean farmers is now 57.7 years. In 2003 farming income lagged about 24 percent behind urban income (MAF 2005). Recognizing this demographic change, in 1996 the Korean government instituted incentives for elderly farmers to continue cultivating rice as well as to encourage those retiring to sell their land to rice farmers (Skeldon 1999). Elderly farmers near retirement age were ensured a specific income level to support their agricultural labor.

Small Farms and Large-Scale Commercialization

Owing to South Korea's postwar land reform and subsequent policies, the vast majority of the nation's farmers are small-scale farmers, with the maximum area limited to a three-hectare holding. For instance, in 1995 the highest percentage of farm households farmed 0.5 hectare or less, with 86 percent of all households on tracts of 2.0 hectares or less (KNSO 2005). In 2004 the number of households farming 0.5 hectare or less increased to 36 percent, and those on 2.0 hectares or less was more or less stable, at slightly above 84 percent of farming households (KNSO 2005).

Thus, the majority of farms in South Korea are small in scale, although farm lot sizes are increasing. The debate about the productive capacity of small farms is quite polarized. Some argue that small farms are inefficient because labor productivity for this sector is little more than one third of the national average (WTO 2004). Arguments in favor of small farms, and relevant to Korea's experience, say that they use labor efficiently, are better environmental managers, and contribute to the local economy of goods and services, thus maximizing growth linkages (Ellis and Biggs 2001). In Brazil, Colombia, India, and Malaysia, small farms were found to have higher productivity than the largest farms, in part because of the double- and inter-

cropping practices of small-scale farmers (Ashley and Maxwell 2001).

The liberalization of agriculture has accelerated the decline of the farmer population through the 1990s and into the 21st century. It has also led to simultaneous growth in the population of tenant farmers working on smaller plots of land and increased holdings and commercialization by large-scale farms to produce larger quantities. The emergence of a dual farm structure raises a challenge for South Korean farmers in competing with rice imports. The unit cost of rice production in South Korea must be compared with that in potential *japonica* rice-exporting countries and regions, such as northeastern China (for example, Heilong Jiang Province) and the United States (for example, the Sacramento Valley). South Korea faces a cost disadvantage, presumably because of its small farm size (compared with the United States) and the high cost of its labor (compared with China).[8] Further consolidation of farms toward larger holdings in South Korea may be difficult because of high land prices that result from the capitalization of subsidies. When a landowner changes her or his residence or engages in nonfarm activities, land is more likely to be transferred for cultivation through the tenancy market.

Stakeholders

South Korean Manufacturers

South Korea's manufacturers are overwhelmingly oriented toward export. In 2002 total exports amounted to US$162 billion, and 92 percent of these exports were industrial goods such as electronic products (semiconductors, cellular phones and equipment, computers), automobiles, and machinery (WTO 2004). The current levels of agricultural protection, however, may reduce the manufacturing industry's competitiveness and its further access to foreign markets. First, higher food prices may lead to higher production costs (owing to higher wages), making South Korea's manufactured goods more expensive on the world market than those of competitors. In addition, agricultural protection causes conflicts between South Korea and its major importers, such as China and the United States, which may seek to expand their agricultural exports to the country. The divergent international interests concerning trade liberalization have created a dilemma for South Korean policy makers.

Korea's Small-Scale Farmers, Farmers' Organizations, and Citizen Support Groups

Food sovereignty is an important part of the attitude of many Korean farmers' organizations toward agricultural trade. Because of the drop in incomes from liberalization and their high levels of debt, many Korean farmers have become more vocal and organized against government trade policy. Various national and regional nongovernmental farmers' organizations and federations have been active in speaking on behalf of farmers nationwide. These groups include the Korean Peasants' League, which has more than 10,000 members, and the Korean Catholic Farmers Federation, as well as myriad regional and local organizations that are part of the national associations. In addition, citizen groups such as the Citizen's Committee for Economic Justice and many urban-based civil society groups support the farmers' demands to leave agriculture out of WTO and other trade agreements. The impact of agricultural liberalization is seen as even more grave because of the high level of farmer debt, which rose to more than 80 percent of income in 2002 (WTO 2004).[9]

South Korean Consumers

The main argument made by WTO members and economists is that liberalized rice trade would benefit consumers by lowering prices. In the case of South Korean rice, consumers have been paying higher market prices for the past several decades, and increases in imports as well as full liberalization would undoubtedly depress the domestic market price and result in an increased consumer surplus. The World Bank study conducted by Wailes (2004) also showed this to be true: based on estimates of the impact of full trade liberalization in 2000, rice consumers in rice-importing countries (in the world as a whole) would gain almost US$33 billion a year, whereas producers would lose about US$27 billion.

[8] Small farm size may not be a factor if one adopts the view that smaller farms are more productive than larger farms.

[9] The accumulation of farmers' debt started in the mid-1970s, when agriculture suffered labor shortages as rural people migrated to the urban areas amid farming commercialization. Since the 1980s, natural disasters, failures in adjustment policies, and, more recently, the Southeast Asian financial crisis have worsened the debt problem.

Nonetheless, some urban consumers, which make up the bulk of the population, still advocate support for the farming sector. In South Korea, as in all countries in Asia, rice is as symbolic a product as cheese or wine in France. Urban majorities can be sentimental about the farming life, a legacy of the fact that many still trace family links to the countryside.

World and Regional Trade Partners

Although bilateral FTAs emerged as a policy option in the 1990s, South Korea did not begin to ratify FTAs until 2002 with Chile. As of 2006 Korea had pursued FTAs with Canada, China, the European Union, Japan, Mexico, Singapore, and the United States (MOFAT 2005).

At the world and regional level, and for most of the 20th century, the biggest exporters of rice were Thailand, Myanmar, Cambodia, and Vietnam. Between 1998 and 2000 the largest five exporters of rice were Thailand, Vietnam, China, the United States, and India (FAO 2002). Other key exporters emerging more recently are Bangladesh and Pakistan. By increasing rice imports to nearly 8 percent of its average consumption for the years 1988–1990 by 2014 to meet MMA requirements under the WTO, and in pursuing additional bilateral agreements on free trade, South Korea has demonstrated a commitment to strengthening a regional trade network (WTO 2004).

A full analysis of the benefits of trade to these rice-exporting countries should include the net benefits as well as the effect of trade on domestic consumption within these countries. The research on rice price variations shows that trade liberalization and resulting world price changes can affect the welfare of both producers and consumers in exporting countries. In many of these countries, domestic consumers, especially the poor, depend on affordable prices for rice, which makes up the bulk of their diet. For them, even a slight increase in rice price may result in a substantial decrease in their consumption of this staple food, with consequent negative effects on nutrition. In addition, because rice is a staple food that has inelastic demand, an increase in rice price leads to an increase in total expenditure on rice that leaves less income to meet other basic needs (nonrice food, education, health care), with negative effects on overall livelihoods. Therefore, it has yet to be answered how liberalization of Korean rice trade would affect those Southeast Asian populations and how benefits from trade would be distributed within these countries.

Policy Options

Some of the following measures constitute forms of support that lie within the "green box" of the URAA, which can be generally defined as those policies that do not distort trade. If price support policies must be phased out, according to the schedule and commitments that South Korea has made, what policy options would still permit the existence of rural households and ensure a certain minimum level of rice production?

Rural Livelihood Diversification

The South Korean Ministry of Agriculture and Forestry is already pursuing government support for the diversification of agriculture. This is not a comprehensive national policy, but rather involves state support for marketing initiatives and the provision of resources, such as computers and Internet access, to facilitate market information sharing in rural areas.

Diversification in the rural sector can take the form of shifting production to more high-profit and export-based crops such as fruits, vegetables, and spices.[10] Such a shift may require different types of production inputs, skills, and technology. To this end, the Korean government has protected some of the fruit, flower, and value-added food production industries.

Like Japan, Korea could set up public works employment projects and other nonagricultural sources of income that are not dependent on the production of agricultural products. In 2003 Korean farmers' level of dependence on farming (41.6 percent) was significantly higher than that of Japanese farmers (14.5 percent) (MAF 2005). If other means of making a livelihood in rural areas were available, young people might migrate back into the countryside. This approach could require significant investment, however, and require a long-term plan for the construction of public works projects. This activity would also change the

[10] It should be noted that there are agroecological constraints to agricultural diversification. Not all high-value export crops can be grown on land that is suitable for rice. Often rice is the only crop that can be grown on land submerged with water during the rainy season.

character and nature of these rural villages and towns.

Product Differentiation and Sector Competitiveness

Studies have shown that consumers are often nationalistic about home-grown rice varieties. Differentiating domestic rice as a high-value product, as Japan has done, is one option that might support minimum consumption levels and thus provide a source of income for rice farmers. Funding for agricultural research may be shifted from high-yield varieties to high-quality yields. Current efforts to raise rice quality include setting a higher price band for better-quality rice (W 4,500/kg [US$3.8/kg] in 2003 compared with a standard price of W 2,300/kg [US$1.9/kg]), distributing improved seed varieties, and enhancing processing and marketing using rice-processing complexes (WTO 2004).

The trend toward expanding and consolidating land holdings to larger parcels in South Korea has thus far been the result of both absentee landlord behavior and real estate speculation. If larger farms are considered more competitive than smaller farms, the government may need to pursue a more concerted and coordinated policy effort to increase farm size. Otherwise, it should pursue a different set of policies aiming to enhance the efficiency of smaller farms. Meanwhile, agricultural investment and improved technology should be sought to enhance productivity and thus competitiveness and to provide consumers with higher-quality rice. A key policy priority is to reduce high farm debt, which escalated to W 27.6 trillion (US$23.2 billion) in 2002. Currently, farm debt is being restructured at lower interest rates for poor farmers (through the Act on Special Measures for Debt Reduction of Farmers and Fishermen of 2001).

Decoupled Payments

Government purchases aimed at maintaining high farm prices provide substantial subsidies to rice farmers that stimulate production and input use, thereby distorting agricultural trade, with potentially adverse effects on the environment. Direct payments, if sufficiently de-linked from production, however, are far less distorting than market price support. At present, direct payments based on area, input use, and overall farm income each accounted for 3 percent of South Korea's producer support in 2003, with almost all area payments contingent on having environmentally friendly farming practices (WTO 2004). Such schemes include direct payments for environmentally friendly farming for reduced fertilizer and pesticide use. Although some of these direct payments still stimulate production and input use, they are likely to be less distorting than output-based market price assistance. More decoupled payments for rice and other agricultural commodities could include general farm services such as infrastructure and agricultural research and development (R&D).

In 2003 the MAF budget increased by 6.5 percent to W 8.7 trillion (US$7.3 billion), or 7.1 percent of the government's total budget, and late that year a 10-year "blueprint" for developing agriculture, aimed at gradually reducing direct price support and introducing or expanding existing "green box" measures, was finalized. South Korea plans to raise total agricultural investment to W 119 trillion (US$99.8 billion) to boost rural farm and nonfarm incomes and to compensate farmers for reduced protection. Efforts to include the rice sector in the transition toward more decoupled payments are needed. Recent moves toward this end include the revision of the Rice Income Compensation Act and the Food Grain Management Act in March 2005 by the Korean National Assembly.

Food Aid to North Korea

Given that South Korea has already achieved self-sufficiency in rice and that domestic demand for rice has declined since the 1980s, heavy government subsidies will likely to induce overproduction of this crop in the future. In fact, there has been an increase in rice stocks in recent years (MAF 2005). If the MMA import regime undergoes no drastic changes before its scheduled expiration in 2014, strategies to solve South Korea's potential overproduction problem will be needed. One of these strategies could be the use of food aid to North Korea. Countries such as the United States have long used food aid as a mechanism to dispose of domestic food surpluses. Although WTO disciplines constrain countries from adopting trade-distorting measures, food aid is not subject to tight disciplines under the URAA, and rules governing food aid are not subject to dispute settlement. The URAA sets forth only guidelines to govern the provision of food aid.

All food aid is potentially trade distorting. These trade-distorting effects are much smaller, however, in places where food is severely insufficient or where there is no functioning market. These conditions apply in North Korea, where 23 million people suffer from hunger owing to food

shortages. Because the provision of food aid from South Korea is in grant form and North Korea does not commercially import food from elsewhere, the impact of food aid on North Korea's agricultural market will be minimal. This fact also means that the provision of food aid by South Korea will comply with Article 10.4 of the URAA that refers to the need to avoid trade displacement and to respect the FAO's "Principles of Surplus Disposal and Consultative Obligations."

Assignment

Your assignment is to suggest a long-term plan for the South Korean government that will address the international trade issues as well as the nation's food needs and the future viability of the farming sector. With food aid to the Democratic People's Republic of Korea still a pressing humanitarian need, propose an economic and political agenda for engaging in partnership with this country. What would a sustainable solution to these various trade and aid issues look like?

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Chapter Fifteen
The Textile and Clothing Agreements (10-7)
by Jill S. Shemin

Executive Summary

Demand for textiles and clothing (T&C) has been rising quickly in the developed world (the European Union and United States), and it is forecast to grow further in the future. At the same time, especially during the past decade or so, low-income developing countries have greatly increased their T&C production, allowing them to develop their T&C industry and utilize their vast resources of low-skilled labor.

For 30 years the world's richest countries have imposed stringent quotas on imports of T&C. From 1974 to 1995, the Multi-Fiber Arrangement (MFA) defined the regulations for tariffs and quotas[1] on all T&C trade categories. The Uruguay Round (UR) Agreement on Textiles and Clothing (ATC) stipulated that import quotas be eliminated in a four-stage process between 1995 and 2005. Over that period T&C quotas were gradually reduced, and on January 1, 2005, all T&C categories were brought under the regular World Trade Organization (WTO) rules that apply to other manufactured goods.

It was certain that after the lifting of T&C quotas there would be winners and losers. Although Canada, the European Union (EU), and the United States have implemented safeguard measures[2] as permitted by the general WTO agreement, imports were projected to rise and prices to fall. The T&C producers in these countries would face serious competition and their market shares would shrink. It was also likely that China would capture a large share of the market, leaving smaller developing countries with very little of the market.

Aside from these concerns, quotas present many other policy issues in bilateral and multilateral trade. Quotas undermine the competitive advantage of developing countries and restrict them to producing at lower levels than they would have under free trade. Quotas also impose additional costs and distortions owing to the monitoring needed to keep track of country of origin, as well as the rent seeking and rerouting that occur in an attempt to bypass the provisions.

Your assignment is to prepare recommendations for a new international agreement for trade in textiles and clothing that would be acceptable to Bangladesh, China, the EU, Honduras, and the United States. Discuss the policy issues with regard to support for and resistance to eliminating the quotas. Justify your recommendations, and assess the consequences for stakeholder groups.

Background

Since the early 1990s, demand for T&C has been rising quickly in the developed world (the EU and the United States), and forecasts show that it will continue to grow. Meanwhile, T&C production in low-income countries has increased substantially, allowing these countries to expand their industry and utilize their vast resources of low-skilled, cheap labor. Low-income countries that can produce both textiles and clothing at very low prices make it increasingly difficult for domestic industries in the EU and United States to compete.

On the other hand, developed countries imposed stringent quotas on imports of T&C under the

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[1] An export tariff is a tax levied by a government on goods being exported. Export tariffs are often used in attempt to counteract dumping. Tariffs may be distinguished from other taxes in that their predominant purpose is not financial but economic—not to increase a nation's revenue but to protect domestic industries from foreign competition. In the context of international trade, a quota is a government-imposed limit on the quantity of goods that may be exported or imported within a given time period. By limiting foreign goods, a quota aims to allow domestic goods to compete more successfully, though the price of the goods may also rise.

[2] A safeguard measure is a temporary or intermittent restriction of imports of a product. Such measures are used to protect specific domestic industries from an increase in imports of any product that is causing, or that is threatening to cause, serious injury to the domestic industry.

Multi-Fiber Arrangement (MFA). Although intended to protect domestic industry, the quotas led to a series of perverse consequences, which grew worse the longer the quotas remained intact (Rivoli 2005b). Importers and subsidized manufacturers in the EU and United States succeeded because they could avoid risks and competition through trade protection, which in turn forced poorer countries to lower their prices further and further to compete. Because the quotas "protected" producers at each stage of production (yarn, fabric, finished goods), the removal of the quotas imperiled rather than enhanced protected producers' chances of remaining competitive. High-end producers in the EU and United States now face with even higher costs and fewer choices in purchasing inputs (Rivoli 2005b).

Trends and Trade Patterns

Textile and clothing trade is strongly influenced by established networks and geographical proximity. Africa, Eastern Europe, and the Middle East dominate the EU market because of their proximity to the EU and their relatively cheap labor. In 2004 EU enlargement made trade with the newly acceding—and mostly poor—Eastern European countries even easier. For the United States, the most important suppliers are Latin America, China, and the Asian newly industrializing countries (Hong Kong, Singapore, South Korea, and Taiwan) because of either geographic proximity or preferential trading agreements.

Although they are two distinctly different industries, T&C have become increasingly meshed and their fates increasingly dependent on each other, as their supply chains have been vertically integrated. It is common today for clothing retailers to manage the supply chain of manufacturing (exemplified by the large multinational corporations that operate all over the world). This vertical integration has occurred simultaneously with the rise of globalization and the corresponding increase of goods traded internationally. In the low- to middle-priced clothing market, the role of the retailer has become increasingly prominent in the organization of the supply chain. As the retail market has become more concentrated, the multinational retailers have attained more power because they can capitalize on their integrated vertical supply chain. They have market power in both the consumer market and the input market (because of their buying power). Given their wide consumer base and often well-built brand name, multinationals are attractive investors for developing countries with cheap labor ready to supply the T&C industry.

Vertical integration[3] has become commonplace because of the increasing popularity of lean retailing. Lean retailing requires frequent, smaller stock replenishments to retailers, giving them the flexibility to adjust to quickly changing consumer tastes and styles. It is dependent on bar codes, uniform product codes, and electronic information processing. This technology has allowed retailers to monitor extremely precisely and quickly what sells, what does not, and when. It may have been the fundamental advance that allowed the textile industry to take off and expand as it has.

In practice, lean retailing works as follows: lean retailers in the United States replenish their stores weekly; sales data are analyzed over the weekend, and replacement orders are placed Monday morning. The manufacturers may have one week to fill the order. This organizational structure, with the appropriate technology to accompany it, allows the retailer to hold less inventory with less risk, reducing costs in two areas. With a constant stream of sales and inventory information, retailers can produce accurate and up-to-date demand forecasts, maintain good control, and sell to a larger market. It also allows them a high degree of flexibility to quickly discontinue goods that are not selling as well. For manufacturers, this system means a very short lead time. This arrangement explains why vertical integration is so attractive and why trade in textile and clothing has become more and more international at all levels as it has become more and more decentralized: a multinational in the United States buys raw materials from one low-income country, ships it to another for manufacturing, and then ships it to Europe, the United States, or both for retail sale.

When a corporation can vertically integrate in a single country, it gains an even more economical and flexible production chain and achieves even faster time to market. For a poor country, having a well-integrated production network is a great asset in entering the export market and being competitive. The quality of infrastructure is important because it helps ensure timeliness, good tracking, and the ability to meet production targets. Improvement in infrastructure is necessary in many

[3] In vertical integration one company controls all stages of production of a good, from the acquisition of raw materials to the retailing of the final product.

developing countries; this is often their differentiating factor, especially in Asia. The poorer and smaller Asian countries have tended to specialize in one stage of the production chain (Nordås 2004), because they must often import a lot of the fabric and textiles for manufacturing (*The Economist* 2005a). China was originally a producer of fabrics and outsourced much of its assembly and manufacturing to nearby Asian countries like Bangladesh. As the industry (and its regulations) undergoes constant change, other textile producers are concerned about China's developing strong infrastructure all the way along the chain.

U.S. T&C Trade and Employment

Textiles and clothing account for 7 percent of global trade. The EU and the United States together import 70 percent of the world's T&C. Between 1995 and 2002, the share of the EU and the United States in the world's total textile imports increased from 35 to 44 percent, mainly owing to an increase in the U.S. share of imports from 14 to 21 percent. The shares of Canada and the EU remained stable during this period.

For U.S. T&C imports, the changes in market share reflected the impact of the North American Free Trade Agreement (NAFTA). Honduras entered the list of top 10 suppliers. India and Pakistan took higher shares of imports at the expense of Hong Kong and Taiwan, higher-income and more distant Asian suppliers, whose market shares sharply decreased (Nordås 2004). Total imports of clothing grew slightly less than textiles in the United States. Mexico increased its export market share in the United States from 7 to 12 percent. There was an increase in the market share of the "other countries," from 37 to 41 percent, showing that a number of smaller suppliers are gaining market share (notably Sri Lanka).

The United States has witnessed a much stronger decline in employment than the EU in the textile and clothing sectors, primarily in clothing. Employment figures dropped nearly 50 percent between 1995 and 2002 (Buelens 2005). In some EU countries, like Greece and Portugal, textile and clothing account for a larger share of their economies than in the average EU country, and T&C employment levels in those two countries buoyed the total EU T&C employment level. Between 1995 and 2002, absolute employment figures dropped in China and India, yet the sheer size of their workforces dwarfs other countries. Other developing countries with notable changes are Mexico and Morocco, both of which showed increases in employment over this period because they directly border major importers (the United States and the EU, respectively).

The Agreement on Textiles and Clothing (ATC)

The UR Agreement on Textiles and Clothing was created to reduce trade distortions in T&C gradually and to allow both importers and chief exporters to adjust. The impact of the ATC had four main dimensions: (1) political gain from a credible multilateral trading system, (2) efficiency gains after quota elimination, (3) loss of quota rents, and (4) gains to consumers. The idea was that the gradual changes, with each stage allowing for more graduated change, would allow the industry to adjust over time to the four dimensions of impact.

The ATC had four stages of quota reduction, until quotas were eliminated in 2005. Each stage integrated more products into the category of nonrestricted products, but by the third stage (beginning on January 1, 2002) it became apparent that the products that were being integrated accounted for a minimal share of the total amounts of T&C being traded on the world market.

To illustrate why these stages were not effective in "gradually" reducing quotas, it is helpful to look the unit value of the categories that were freed from quota restriction. China, with its cheap labor, scant regulation, and seemingly unending potential for cheap textile production, entered the WTO in 2002 and has achieved domestic economic growth while maintaining its competitive strength internationally. As it opened itself more and more to foreign markets, China took a larger share of the import market, and the unit value of these goods decreased. Market share declined for the remaining Asian countries, mostly smaller producers and all smaller than China. Thus, a large part of China's import share gain was at the expense of smaller developing countries (Buelens 2005). This outcome was in line with the trends of the past 10 to 15 years. In 2002 in China, every category of T&C exports decreased in unit value, with some decreases as high as 55 percent (11 categories total). Thus, for China there has been an inverse relationship between its change in market share and changes in unit value, reflecting the impact of increased competitiveness. Although Bangladesh and India also saw a decline in unit value in some

categories, other categories saw an increase (Buelens 2005). The general trend in the T&C industry at the time was that more categories were becoming cheaper, and those were growing the fastest.

On January 1, 2005, the quotas were lifted. As expected, exports from China soared. Total Chinese textile and clothing exports to the United States were 60 percent higher in the first quarter of 2005 than in the same period in 2004 (*The Economist* 2005a). China's exports to the EU rose by more than 30 percent, pushing China's total share in global clothing trade to 28 percent. China's growing market share had striking effects on both importing and exporting countries. Exports from Bangladesh, Cambodia, India, Pakistan, and Sri Lanka to the United States all declined. African and Latin American textile and clothing producers were hit particularly hard. Exports to the United States under the African Growth and Opportunity Act[4] (AGOA) fell by 25 percent in the first three months of 2005, and thousands of jobs disappeared. The International Labor Organization reported that the main losers in the world clothing market overall were South Korea, Taiwan, and a number of other smaller developing countries.

Thus, the lifting of the quotas had positive effects and some immediate negative effects. Large importers found their long-protected domestic industries bombarded with cheap imports with which they simply could not compete considering their higher labor costs. These cheaper imports did, however, benefit consumers. Across the EU, consumers were paying billions of euros more for protected domestic production of T&C goods. The new arrangement would also allow the retail and sales sectors to grow in an unwarped manner, based on consumer demand and market supply, and would allow the retail sector to grow in an uninhibited fashion, diversifying or homogenizing depending on consumer preferences.

Owing to surging imports from Asia (mostly China), by June 2005 the United States had reinstated quotas under the safeguard protection clause in 7 of the 11 categories. Annual growth of imports in each category is restricted to 7.5 percent, and the restriction is renewable for three years until 2008.

China and the EU engaged in bilateral trade negotiations to "manage China's integration into the global economy in a sensible and smooth way" (*The Economist* 2005c) and came to an agreement in July 2005. If the quota removal were to remain, the mix of products in each designated category (goods produced are each assigned to their appropriate category with assigned quotas) would likely shift toward lower-priced goods, and thus it was expected that the unit values would decrease significantly. The final decision made allowed quotas to remain in place, limiting the growth of 10 categories of Chinese textile exports to 8 percent to 12.5 percent each year until the end of 2008 (*The Economist* 2005c). During these month-long negotiations, however, Chinese exporters were rapidly expanding production of apparel and textiles in anticipation of the opening of the EU market. When the negotiations were finalized, there was a stockpile of goods well over the decided quota at European and Chinese ports waiting to be imported. Further discussions continued and reached a solution: half the goods were allowed free entry into Europe and the rest were imported by borrowing from 2006 quotas. For the United States and China, no such bilateral agreement was reached. The two sides apparently kept getting stalled on basic elements such as the length of the pact.

The pressure to protect domestic textile industries in both the EU and the United States is immense; lobbyists and unions alike are putting pressure on the government to "keep jobs at home" and "protect the workers." Moreover, it is generally more difficult to pressure a national government to make an active fundamental change. Politically, the protectionists probably have a slight advantage because they are merely pressuring the federal government to keep the status quo.

Policy Issues

The ATC's phasing out of T&C quotas has raised a number of issues. First, although there is an apparent consensus to eliminate quotas, there is resistance from the most-developed countries and the main importers, as well as from smaller developing countries that cannot compete with China. Second, despite the 10-year period of the easing of quotas in the T&C sector, countries did not use that time

[4] AGOA was passed by the U.S. Congress in May 2000 as Title I of the Trade and Development Act of 2000. The purpose of this legislation was to help stimulate economic growth in Sub-Saharan Africa.

efficiently to make the necessary adjustments in domestic markets. Third, the legal provision of safeguard measures in the WTO agreement underscores the authority of the EU and the United States to continue their protectionism. Domestic policy issues, such as the protection of domestic jobs in the EU and U.S. textile and clothing sectors, must also be considered.

China remains a special concern. China was welcomed into the WTO in 2002 after making a series of important commitments to open and liberalize its market in order to better integrate into the world economy and offer a safer and more predictable environment for trade and foreign investment in accordance with WTO rules.

For the 12 years following accession, there will be a special transitional safeguard mechanism in cases where imports of Chinese products cause, or threaten to cause, market disruption to the domestic producers of other WTO members. Previous prohibitions, quotas, and other restrictions against imports from China that are inconsistent with the WTO agreement, however, will be phased out or otherwise dealt with.

With respect to T&C trade, this means that when China acceded to the WTO it became subject to the rights and obligations of the ATC. There is a safeguard mechanism in place specifically for T&C categories from 2005 until the end of 2008, permitting any WTO member country to take action to curb imports in case of market disruptions caused by Chinese exports. Chinese textile factories have tended to specialize in one process and finish goods overseas to avoid quotas. But unlike its main rivals, China has the advantage of huge domestic fiber and fabric production. Without quotas, it could build vertically integrated firms, lowering costs, raising quality, and cutting time to market (*The Economist* 2005a). This situation offers an attractive opportunity for foreign multinationals to either contract with or own Chinese factories (most of which specialize in one production process) and then to ship the goods overseas to be finished and thus avoid quotas. Here is yet another area where removal of quotas would allow China to produce at an even lower cost—vertical integration in a variety of areas throughout the industry will give them an advantage over many other countries. It also will provide new opportunities for Chinese T&C businesses, which have grown over the years.

As discussed earlier, an area of serious concern for governments is the impact of the dramatic fall in T&C prices on domestic industries in the EU, the United States, and other developing countries. Many forecasts show that China will take 50 percent of the U.S. market and 29 percent of the EU market once quotas are lifted. This shift could be bad news for many of the smaller and poorer nations (mostly in Asia) that have had no direct foreign investment to beef up manufacturing and for others that may have slightly higher living standards, and thus labor costs, that make it harder for them to compete with China's labor force. One model shows that Bangladesh, Turkey, and countries in North Africa and Eastern Europe could be squeezed out of the EU market, and African and Mexican apparel manufacturers out of the U.S. market (Nordås 2004).

Most economic models are created without factoring in the nuances of the textile and apparel industry, such as the time-to-market issue. Fashion has increasingly become a time-oriented, fast-moving market, and apparel is seen as "a perishable good" (*The Economist* 2005b), and it shows no sign of changing. China may be the cheapest option, with the largest supply of cheap labor and a newly opened economy, but if there is a disruption in the supply chain, retailers need to have other sources of imports. This need to reduce risk and diversify supply may create an opportunity for other developing countries to compete with China to meet the great consumer demand for apparel.

For the United States, Chinese monetary policy and the exchange rate is also an important issue. Most textile firms (and U.S. politicians) want to keep quotas unless China revalues its currency. Currently the yuan is fixed to the dollar at an artificially low exchange rate (although this is arguably likely to change). China is not currently subject to the U.S. antisubsidy law because it is deemed a "nonmarket economy" (which makes it easier for U.S. firms to file antidumping cases against it). But it is against WTO rules to declare China a market economy for the purposes of subsidies and a nonmarket economy for the purposes of antidumping. A new piece of U.S. legislation is in process—the Stopping Overseas Subsidies Act—that would allow U.S. firms to get countervailing duties to make up for Chinese subsidies, including a subsidized exchange rate. This act would make duties and subsidies dependent on the currency value.

Stakeholders

For the past 30 years the intertemporal T&C quotas have prevented many developing countries from reaping the full benefits of the growth in global trade in this industry. A variety of multinational corporations have contributed a lot of foreign direct investment to start-ups in the clothing and textile infrastructure in lower-income countries in East Asia (notably China), Southeast Asia (notably Bangladesh and India), and Latin America (notably Mexico), as well as in North Africa and Turkey.

Commercial subsectors such as textile producers, retailers, and import companies throughout the EU and United States also have an interest in T&C trade issues. There are also some differences within regions, such as among European countries. France, Greece, and Portugal are more concerned about the importation of T&C goods than other EU countries because their T&C manufacturing and production industries still count for a significant portion of their economy.

Different parties have different concerns. For example, Latin America is concerned about competition from China and its well-integrated production networks. China and other Asian producers have concerns about Latin America's proximity to the United States and the proximity of Turkey, North Africa, and Eastern Europe to the EU. Asian producers may also be concerned about increasing energy prices.

Poor countries are concerned about China and its imminent development. In some small Asian countries, clothing makes up as much as 66 percent of exports (Bangladesh). These countries do not produce their own raw textiles and rely on imports, which raises the price of clothing, even if only marginally. This fact makes them less competitive as clothing exporters and can even put them into debt if clothing sales do not exceed the cost of imported inputs. China has maintained its position as the world's largest exporter of both textiles and clothing since 1995. After the 2002 liberalization, China's import share of global T&C jumped from 25 to 40 percent in the categories that had been the most restricted (Buelens 2005). This is a good illustration of how the lower the quotas were kept by importing nations, the larger their adjustment will be.

Policy Options

Complex policy issues face all the parties involved. Many do not believe that safeguard measures are justified, especially when they are costing consumers and taxpayers money. Although the transition period 1995–2005 was poorly used, this may no longer be an excuse to continue quotas or allow limitless safeguard measures. Large and instantaneous changes in prices, production, market shares are normal, and what will follow the transition is a normal and expected adjustment to the new trade and production patterns (Buelens 2005).

The likelihood that one or two big developing countries will take most of the market is of serious concern. This issue has united many parties that are commonly on opposing sides. A real hinging issue is the industrial countries' reluctance to deal with adjustment issues directly, and there is no mechanism to force them to do so on any timeline other than their own voluntary one. Again, there is immense domestic pressure to continue to protect these industries, which are home to a long production line and many jobs. It appears that industrial countries countries do not want to eliminate quotas until they have "moved" enough citizens out of this industry, either through job creation or a simple cyclical downturn.

One policy option for industrial countries may be to enact a clause encouraging importation from multiple sources either in a WTO agreement or, better yet, in federal trade regulation. Such a clause would benefit a range of developing countries that are smaller than China and India. It would also assuage rich countries' concerns about China's rising too quickly and outcompeting them. Another issue that may need to be taken into account is the cost of transport and energy and how it may affect price of goods. If the cost is high enough to make goods from China less competitive, it opens the door for trade with countries that are closer geographically but that have slightly higher unit prices. Currently this issue is never cited as affecting the price of goods.

Export tariffs in the textiles and clothing sector may also be another policy option for developing countries to consider. In December 2004 China imposed an export tariff, raising the price of its goods and making them slightly less competitive, but the country was at least able to keep the cash and avoid safeguard measures enacted by importing

nations. The optimistic theory is that the government can use the money it collects to benefit the population as a whole, although China's goods will be slightly less competitive. Export tariffs may be a viable option only for a country like China, but for most other developing countries, establishing a tariff would likely make them too uncompetitive and hurt their economy. The use of export tariffs has been a hotly debated issue in the WTO.

In May 2005 China increased export taxes unilaterally by up to 400 percent for 74 clothing products, which account for about 20 percent of clothing exports. The economic impact of this change should be minimal because it affects only 3 percent of the mainland's exports. The effect on the upstream textile industry will be more significant, however, because the percentage increase in price is compounded in each item. The new tax level represents 6 percent of the overall cost per item of clothing. When one considers that profit margins are already slim, this change could seriously reduce the competitiveness of the industry (*The Economist* 2005a).

Small low-income countries (LICs) that compete with China may want to focus on how policy can promote vertical specialization in the T&C industry. Most smaller LICs may have a lower average wage than China but cannot compete on speed, quality control, reliability, and scale, all of which affect the price (especially in an industry where time-to-market has become vital). Vertical specialization will help improve these characteristics, as well as improve communications, as these industries grow and develop. These improvements would allow them to better compete with China and, with quota removal, would make these countries more attractive to importing countries seeking to import from multiple sources.

Another tactic developing countries may consider is lowering import tariffs on textiles. Lowering tariffs may have a substantial positive impact in the short run, as lower and more uniform tariffs on inputs translate immediately into lower and less distorted input prices for producers. Textiles are often protected for industrial policy purposes—in industrial and poor countries alike—but the costs to the clothing and apparel industry should be weighed against the benefits to the textile industry. To thrive in an increasingly competitive environment, the clothing industry must be able to acquire its inputs at world prices.

Another issue is access to capital, which is difficult for clothing firms and constitutes a major entry barrier for new entrepreneurs. While weighing policy options, LICs must consider whether their business environment is adequate for foreign investment. (For example, do they have the capacity to handle large sums of money? Can business operate relatively easily?) Liberalization of the financial markets in LICs combined with sound macroeconomic policy could bring in new foreign capital and help overcome this bottleneck, but only in the long run. In the short run, the introduction of special credit facilities for small microenterprises may show some positive effects. Bangladesh is a good example.

In summary, governments of poor countries have a crucial role to play in leading and coordinating a coherent strategy for the textile and clothing sector, with significant help from donors and international organizations. Short-term measures such as technical training and streamlining of customs procedures have the potential to substantially and quickly improve the competitive position of firms. Bilateral agreements on trade liberalization may also be possible for short-term measures, and parties may be more likely to compromise on short-term issues than on long-term commitments. More generally, the debate on industrial policy and the appropriate role of governments is more open than ever. Each LDC has its own characteristics and therefore needs to define its own policy. Yet in today's international trade environment, policies must also be developed in the context of other countries' policies or they will fail.

Assignment

Prepare recommendations for a new international agreement for trade in textiles and clothing that would be acceptable to Bangladesh, China, Honduras, the EU, and the United States. Discuss the policy issues with regard to support for and resistance to eliminating quotas. Justify your recommendations, and assess the consequences for stakeholder groups.

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Chapter Sixteen
The Coffee Crisis: Is Fair Trade the Solution? (10-8)
by Fuzhi Cheng

Executive Summary

Coffee is an important crop widely grown in the developing world. The economies of some countries, particularly those in Central America and parts of Africa, are highly dependent on coffee as a source of both national income and export earnings. About 25 million people, most of whom are small-scale farmers, rely on coffee for a living.

Smallholder coffee farmers once reaped abundant benefits from their crop. Cash from coffee sales financed schools, hospitals, infrastructure, and training for farmers. Coffee-producing regions were also associated with higher income levels, higher literacy rates, higher nutritional levels, and less political instability. But all these benefits have evaporated since the late 1990s, when the world coffee price slumped to unprecedented low levels. The collapse of coffee prices has led to a humanitarian crisis with devastating effects on coffee growers, communities, and countries.

In the absence of government intervention in the sector, a number of innovative approaches, most notably the Fair Trade movement, have been proposed to revive farmers' incomes from coffee production. The Fair Trade movement seeks to challenge historically unequal international market relations, transforming North–South trade into an avenue of producer empowerment and poverty alleviation. Recently the Fair Trade movement has been characterized by national labeling initiatives coordinated under the Fairtrade Labelling Organizations International (FLO). The FLO certification is designed to help coffee growers gain direct access to international markets at guaranteed premium prices.

Fair Trade has had some success, but it also raises a number of issues. First, there is substantial concern about how much growers can actually benefit from this scheme. Although studies have shown that a decent share of Fair Trade premiums do reach growers, a large portion still goes to companies' profits or to administrative costs of Fair Trade organizations. Second, it is questionable whether Fair Trade can be a long-term solution to the coffee crisis. The cause of the coffee crisis is oversupply, so the high prices Fair Trade offers induce farmers who would otherwise seek other alternatives to stay in coffee production, exacerbating the current situation. Third, the Fair Trade practice itself may be an inefficient means of wealth reallocation, making it susceptible to criticism from economic grounds.

Recognizing that the current coffee market problems are complex, policy makers have twin objectives: to meet the short-term needs of poor farmers during the crisis and to find longer-term solutions to overproduction in the market. Obviously, the most effective long-term strategy to assist the majority of coffee growers is not to create a niche market, but to help them explore other potential sources of income and dismantle barriers to switching crops. Before such a long-term strategy can take effect, however, Fair Trade should continue to be pursued.

Your assignment is to design an international coffee agreement to solve the problems now facing the farmers. By accounting for the different parties involved—coffee-producing countries, coffee-consuming countries, and nongovernmental organizations (NGOs)—you are required to identify both challenges and opportunities in the negotiation process.

Background

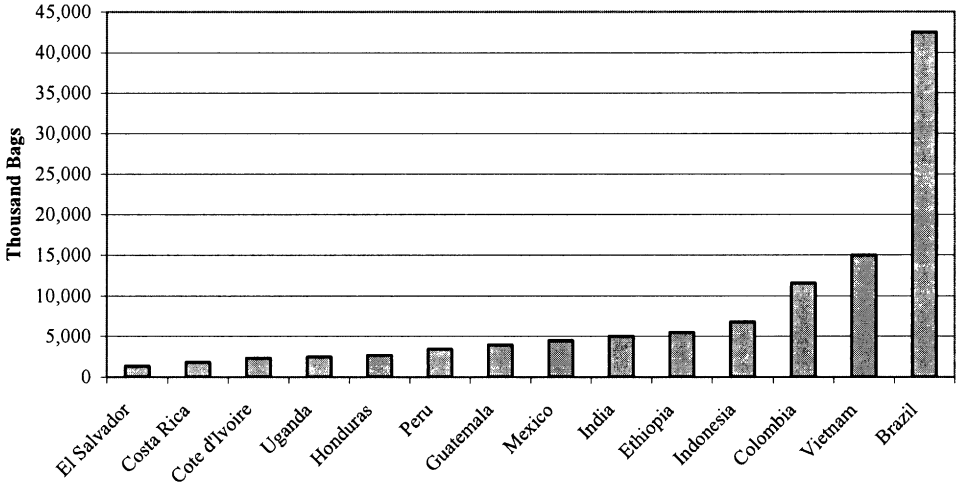
The Importance of Coffee in Developing Economies

Coffee is one of the world's most important primary commodities, ranking second only to petroleum in terms of value traded worldwide. In 2003 total world coffee exports amounted to 90 million bags (60 kilograms/bag) worth US$6 billion. Two major coffee varieties are found in the world market: Arabica, produced mainly in Latin America,

and Robusta, produced mainly by Vietnam since the 1990s as well as by some African and Southeast Asian countries. Owing to its better quality, milder flavor, and more demanding cultivation, Arabica usually commands a higher price than Robusta.

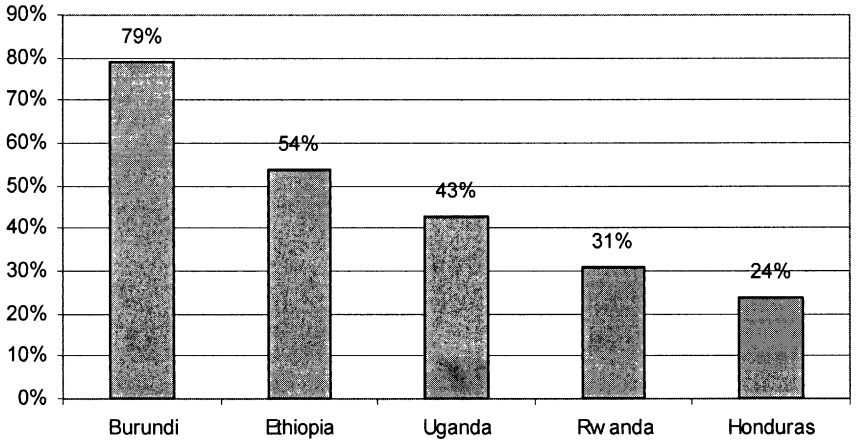
Coffee is widely grown in the developing world. In 2006 more than 122 million bags were produced in more than 50 developing countries, including some of the world's least-developed countries. Brazil is by far the largest coffee producer, followed by Vietnam, Colombia, and Indonesia (Figure 1). The economies of some countries, particularly in Africa and Central America, are highly dependent on coffee as a source of national income and export earnings. In Nicaragua, for example, coffee accounts for 7 percent of total gross domestic product (GDP). In Ethiopia, coffee accounts for more than 50 percent of export revenues, while in Burundi the figure is almost 80 percent (Figure 2).

Figure 1: Major Coffee-Producing Countries, 2006



Source: ICO 2007

Figure 2: Percentage of Coffee Exports in Total Exports, 2006



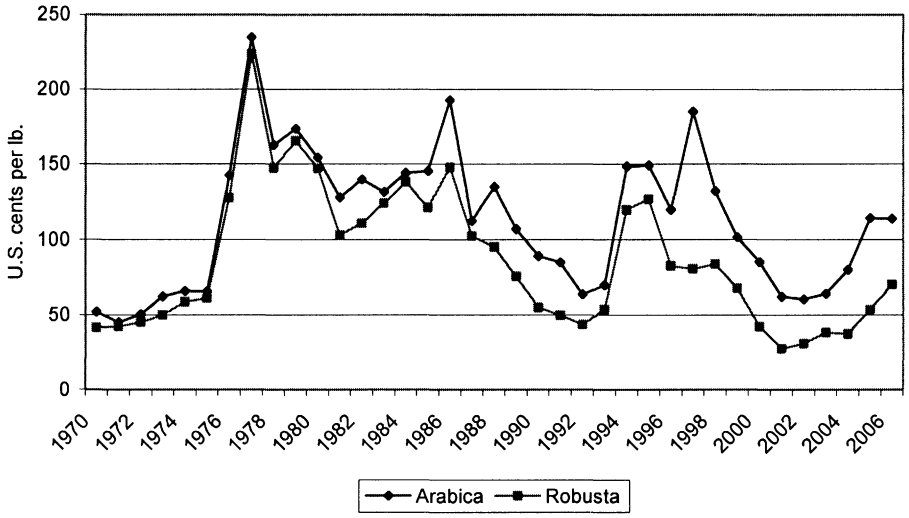
Source: ICO 2007

Coffee plays an essential role in the livelihoods of the world's poor—about 25 million people rely on coffee for a living. For instance, in Ethiopia, where the first coffee crop originated, more than 700,000 households are directly involved in coffee production. In Brazil, where almost a third of the world's coffee is produced, about 300,000 people are coffee farmers and a further 3 million are employed in the coffee industry. Unlike most other internationally traded commodities, coffee is still produced on smallholdings farmed by peasant households rather than on large plantations. About 70 percent of the world's coffee is grown on farms of less than 10 hectares, and of this share, the vast majority is grown on family plots of between 1 and 5 hectares (Oxfam 2002). Even in countries that do have large plantations, such as Brazil, India, and Kenya, there are many smallholder producers as well. For these small producers, coffee provides the main—and sometimes the only—source of cash income. Revenues from coffee are used to buy food items that cannot be produced on the farm, to pay for education and health care, and to meet other cash expenses, such as the purchase of agricultural inputs.

The Coffee Crisis

In the past smallholder farmers reaped abundant benefits from their coffee crops. Cash from coffee sales financed schools, hospitals, infrastructure, and training for farmers. Coffee-producing regions were also associated with higher income levels, higher literacy rates, higher nutritional levels, and less political instability. All these benefits have evaporated since the late 1990s, when the world coffee price slumped to unprecedented low levels (Figure 3). According to the International Coffee Organization (ICO), average coffee prices for Arabica and Robusta were well above 100 U.S. cents per pound (lb.) from the mid-1970s to the late 1980s. The demise of the International Coffee Agreement (ICA) in 1989 marked the start of a long-term price decline. Apart from two sharp price spikes around 1995 and 1997, caused by the loss of the Brazilian crop to frost, coffee prices have dropped to the lowest levels recorded in the past 30 years (or the lowest in the past 100 years when adjusted for inflation). In 2001 prices touched their historical minimum of just 30 cents/lb. for Robusta and 60 cents/lb. for Arabica. Prices have recovered somewhat in recent years owing primarily to production slowdowns in Brazil and Vietnam.

Figure 3: Arabica and Robusta Prices (U.S. cents/lb.), 1970–2006



Source: ICO 2007

The collapse of coffee prices has generated a humanitarian crisis with devastating effects on coffee growers, communities, and countries. Families dependent on money generated by coffee are pulling their children, particularly girls, out of school, undermining the next generation's prospects of escaping poverty. In some regions, hunger and malnutrition rates are on the rise as basic food and medicines become unaffordable. Desperate coffee farmers are forced to migrate to cities or to grow illicit crops such as coca. Beyond farming families, national economies are suffering. For example, countries in Central America saw revenue from coffee exports fall 44 percent in one year—from US$1.7 billion in 1999/2000 to US$938 million in 2000/2001 (Oxfam 2002). During the same period, Ethiopia's export revenue from coffee fell 42 percent, from US$257 million to US$149 million. Governments that rely on the export revenues from coffee are faced with dramatically declining budgets for education and health programs and reduced capability for debt repayment. For countries such as Burundi and Ethiopia, where coffee accounts for more than half of export earnings, the fall in world prices threatens to generate an acute balance of payment crisis. Some regions are on the verge of more serious humanitarian crises, similar to those that haunted Mexico and Rwanda during the early 1990s.[1]

Causes of the Crisis

For most of the postwar period, trade in coffee was regulated by a series of International Coffee Agreements (ICAs). The ICA regime was an agreement among producing countries to restrict supply coupled with an agreement among consuming countries to keep prices high. In this period the coffee industry in most producing countries was regulated, with parastatal enterprises heavily involved in stabilizing prices and monitoring quotas. After 1989 a free-market move dominated the political agenda in many producing countries, and consuming countries no longer felt a Cold War justification for supporting producers. The ICAs dissolved in 1989, and by the 1990s many producing countries had partially or fully liberalized their coffee industries.

Domestic liberalization has been accompanied by development agencies' strong efforts to promote production and exports, through project lending and wider macroeconomic reforms. For example, various development projects were instrumental in helping Vietnam start producing and exporting coffee. The country is now the world's second largest exporter of coffee. Similar projects have been undertaken in other countries. Since 1990, with the planting of new coffee trees, technological innovation, and the arrival of newcomers in the market, world coffee production has increased by 15 percent. World consumption, however, has increased by only half that rate, resulting in excess supply and accumulating stocks of more than 1 million metric tons in consumer countries.

There is little political support from coffee-producing countries to restore the pre-1989 regime by regulating their coffee supply, as evidenced by the failure of the recent Coffee Retention Plan (CRP) developed by the Association of Coffee Producing Countries (ACPC).[2] Indeed, production controls or export retentions may be beneficial in the long run if prices could recover to remunerative levels, but they could also be costly in the short run in terms of lost sales. Few countries would be willing to make an initial move so that all would gain eventually. An agreement becomes even less appealing when defaults or "free rider" issues arise. Major suppliers in East Asia, such as Indonesia and Vietnam, appear bent upon increasing their market share, regardless of world prices.

A lack of support from coffee-consuming countries has also contributed to the current crisis. Despite the mounting evidence that deregulation of coffee markets has led to an economic and social disaster for the poor, the rich world has resisted efforts to get the issue of commodity price management back onto the international agenda. Instead, they have adopted a "no intervention policy," not least because the crisis means good business for their politically powerful transnational companies.

Fair Trade Certified Coffee

In the absence of government intervention in the sector, a number of innovative approaches, most notably Fair Trade coffee, have been proposed to revive coffee production.[3] Fair Trade coffee started

[1] Some argue that the armed conflicts in Chiapas and Oaxaca in Mexico and the genocide in Rwanda are among the earlier episodes of the coffee crisis (see Halle et al. 2002).

[2] Under the CRP, initiated by Brazil and Colombia, exporters are requested to withhold 20 percent of their exports from the market.

[3] Fair Trade is one of three kinds of "sustainable" coffee schemes; the other two are organic and shade-grown coffee. Organic coffee is produced under strict certifi-

as a part of a larger Fair Trade movement that dates back to the late 1940s when the Alternative Trade Organization (ATO) was established (see Moore 2004 for a general discussion of Fair Trade). In comparison with conventional trading structures, the ATO offered higher returns to producers of handicrafts and agricultural commodities in the developing world through direct trade and fair prices. From its ATO roots, Fair Trade has grown rapidly over the past two decades as a result of a labeling initiative introduced in the Netherlands in 1988. Although it has adopted some of the practices from the ATO, Fair Trade labeling has been designed as a market-based policy instrument to simultaneously achieve a variety of social goals related to health, the environment, social justice, and poverty. Fair Trade coffee labeling, in particular, aims to improve the livelihoods and well-being of small coffee producers by increasing their market access, strengthening their organizations, paying them a fair price, and providing continuity in trading relationships.

Central to the today's Fair Trade coffee movement is Fair Trade labeling. The first Fair Trade label in the Netherlands was named "Max Havelaar," after a fictional Dutch character who opposed the exploitation of coffee pickers in Dutch colonies. Other national labeling initiatives soon followed, some using the same name (Belgium, Denmark, France, Norway, and Switzerland), and others introducing new names, such as TransFair in Canada, Italy, and the United States, Fairtrade Foundation in the United Kingdom, and Rättvisemarkt in Sweden. In 1997, 17 national Fair Trade initiatives (now 20 countries) together founded an umbrella organization, the Fairtrade Labelling Organizations (FLO) International. Each country continues to use its own Fair Trade coffee logo in labeling, although an effort to harmonize the various national logos into one international certification mark is underway.

Under the current Fair Trade labeling scheme, affixing a Fair Trade logo to their merchandise requires coffee roasters to purchase from Fair Trade–certified importers who (1) buy directly from FLO-approved grower organizations using purchasing agreements that extend beyond one harvest cycle; (2) guarantee the FLO minimum price, which might vary across coffee types and origins, pay an additional US$0.15 per pound for coffee certified as organic, and pay a social premium valued at US$0.05 per pound (Table 1);[4] and (3) offer pre-financing up to 60 percent of the contract value. To be included on the FLO's approved registry of Fair Trade coffee growers, producers must (1) be small, family-based operations; (2) be organized into politically independent democratic cooperatives; and (3) pursue ecological goals and conserve natural resources.

Stakeholders

Consumers

Consumers and their sense of social obligation are the backbone of the Fair Trade coffee. The penetration of the Fair Trade movement into the Northern market (for coffee and various other commodities such as bananas, tea, chocolate, honey, and sugar) are supported by Northern consumers' heightened concerns over global ethics and the rise of "ethical consumption" practices where the social relations embodied in particular commodities increasingly shape product choices. Fair Trade coffee addresses such ethical concerns, assuring consumers that buying the product guarantees a better deal for the Southern producers. The consumption of Fair Trade coffee thus offers an important opportunity for consumers to identify themselves as socially conscious individuals. By building a new civic and domestic convention within Fair Trade networks through their purchases and consumption, consumers individually can challenge the old business norms and practices that have so far shaped the mainstream trade regime. Increasing consumer involvement in Fair Trade may also form a collective bargaining power, which can either presses corporations to enter Fair Trade networks or seek changes in North-South relations more generally.

cation guidelines and is grown without the use of potentially harmful artificial pesticides or fertilizers. Shade-grown coffee is produced in regions where natural shade (canopy trees) is used to shelter coffee plants during parts of the growing season.

[4] When world coffee prices rise above the guaranteed minimum, importers must pay US$0.05 per pound above the world market price.

Table 1: Guaranteed Prices for FLO-Certified Fair Trade Coffee (U.S. cents/lb.)

	Regular		Certified Organic	
Type of coffee	Region I	Region II	Region I	Region II
Washed Arabica	126	124	141	139
Nonwashed Arabica	120	120	135	135
Washed Robusta	110	110	125	125
Nonwashed Robusta	106	106	121	121

Note: Region I is Central America, Mexico, Africa, and Asia. Region II is South America and the Caribbean.
Source: FLO 2006

Farmers, Cooperatives, and Rural Communities

Currently, 221 coffee grower cooperatives represent 800,000 small-scale growers in 24 of the world's major coffee-exporting countries in Africa, Asia, and Latin America (TransFair USA 2006). The most important impact of Fair Trade has been on the lives of these smaller farmers, who in recent years have been able to sell their coffee at prices that are significantly higher than those in conventional markets. The FLO, calculating the difference between the ICO average indicator price and the Fair Trade price, shows that producers earned an extra US$22 million by selling Fair Trade coffee in 2003 alone (FLO 2006). One cooperative in Ethiopia reported that the coffee sold through Fair Trade gave its farmers 70 percent of the export price, compared with only 30 percent if sold in the open market. In Oaxaca, Mexico, coffee producers estimate that they more than doubled their sales revenue by selling through Fair Trade channels instead of traditional ones. For many small-scale coffee growers, the price premiums they can get have meant the difference between survival and bankruptcy. Higher prices have improved their living conditions and enabled them to meet their basic needs.

The indirect benefits through farmer cooperatives may be even more important. Fair Trade labeling organizations require that producers be collectively organized to facilitate the export capacity of small-scale growers and empower these associations as an instrument for the social and economic development of the members. FLO requirements that decisions regarding the investment of the Fair Trade social premium (US$0.05 per pound) be made democratically can support collective practices within producer cooperatives. Many cooperatives invest this money in coffee infrastructure, including quality improvements, quality controls, organic conversion, warehouses, and processing facilities, as well as in community projects including schools, sanitation, and health services. They also provide opportunities for economic independence and community involvement for women.

Although the outspoken motive of Fair Trade is to support individual farmers and their communities, also imbedded in its philosophy is environmental conservation and sustainable agriculture. Currently, more than 80 percent of Fair Trade coffee is organic, in contrast with regular coffee, which uses fertilizers and pesticides, including DDT, that then contaminate local watersheds and can harm the health of workers. Regular coffee grown on large plantations can also cause erosion, deforestation, and loss of biodiversity. Fair Trade farmers, however, are required to abide by certain ecological requirements and to conserve natural resources.

Roasters and Distributors

Coffee roasters and distributors and their brand names can greatly influence product specification and consumer demand in the market place. Despite their potentially divergent commercial objectives, coffee roasters and distributors and their public name recognition and associated quality conventions can be used to promote Fair Trade. Recognizing this, Fair Trade labeling groups have attempted to enroll roasters and distributors and apply Fair Trade labels to their already branded corporate products in an effort to extend coffee sales within conventional retail channels. According to TransFair USA, roasters and distributors are the key link in the value chain for Fair Trade because they can determine the types of green coffee they sell and have the highest profit margin in the value chain to absorb the costs associated with Fair Trade (TransFair USA 2006).

Fair Trade coffee may turn out to be profitable for roasters and distributors as consumer demand for socially responsible goods, including Fair Trade

coffee, is rising. Survey studies show that 81 percent of Americans are willing to switch brands to help support a cause when price and quality are equal, and 63 million consumers base their purchasing decisions on how the products they consume affect the world (TransFair USA 2006). Some retailers have noticed this market trend and created corporate programs in order to ensure consumers of their commitments to a greater social responsibility in addition to their search for profit. There are even companies whose very profits are based on their marketing of social responsibility and ethical consumption. For coffee rosters and distributors in general, incorporating a recognized code of social responsibility can at least gain some advantage by promoting a positive product image to consumers.

Getting roasters and distributors involved in the Fair Trade movement, however, has been an uneven process. When labeling was first initiated, small socially conscious coffee retailers and roasters who had long been buying directly from producers moved easily into Fair Trade networks and helped develop and maintain them. Mainstream roasters are much slower and more reluctant to participate owing to conventional industrial concerns over brand quality, standardization, and efficiency.

Fair Trade Organizations

The Fair Trade labeling organizations, including the FLO and its members, are not directly involved in coffee production or trade. Instead they seek to promote the market for Fair Trade coffee by working with coffee grower cooperatives, importers, roasters/wholesalers, and retailers. Coffee roasters and distributors may buy a license to display the Fair Trade logo on specific packages of coffee if they purchase from cooperative groups that are on the FLO coffee register and uphold FLO standards and procedures. Unlike other certification schemes, like the ecolabeling of organic food and sustainable forest products, which focuses strictly on conditions at the point of production, Fair Trade's certification criteria cover both trade and production conditions. The FLO constantly monitors growers and their cooperative groups and maintains the producer registry, while national labeling organizations keep track of licensing, monitoring, and collecting fees from imports, roasters, and distributors.

Policy Issues

How Much Can Farmers Benefit from Fair Trade?

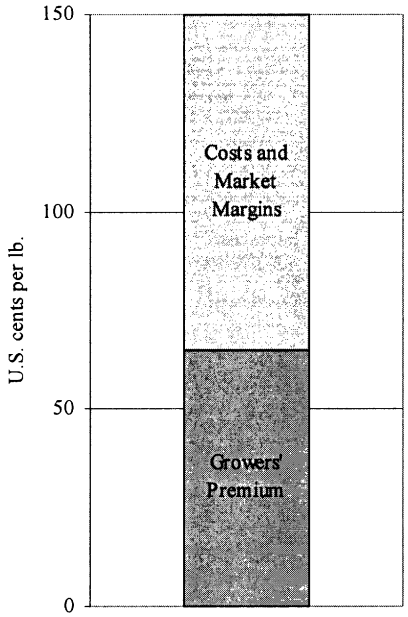
A frequently asked question about Fair Trade coffee is how much of the retail price premium actually reaches the growers. Although many consumers believe that farmers are significantly better off because of the higher prices they get, a study by Mendoza (2000) has shown the opposite. Mendoza measured prices along the supply chain for instant coffee produced in Nicaragua and sold in the United Kingdom in 1996. His results suggest that farmers received a premium of only US$0.09 per pound, or 2 percent of the US$4.23 retail premium. The UK distribution system absorbed the largest single fraction of the retail premium—US$1.54, or 36 percent. Since the Mendoza study uses data from 1996, the results may well underestimate current Fair Trade benefits for farmers, since the world coffee price was then much closer to the guaranteed Fair Trade price and the marketing margins were much larger.

Zehner (2002) assesses the distribution of the Fair Trade retail price premium for one pound of roasted mild Arabica coffee sold in the United States in 2002 (Figure 4). Based on the 2002 world market price of US$0.59 per pound of Arabica coffee, Zehner shows that the FOB (free on board) price premium paid to a cooperative was US$0.67 per pound of green coffee (US$1.26 less US$0.59), or US$0.80 per pound of roasted coffee.[5] Assuming a cooperative retains US$0.13 of the US$1.26 it receives per pound of green coffee, or US$0.15 per pound of roasted coffee, farmers would eventually get US$0.54 for each pound of green coffee they sell (US$0.65 per roasted pound).[6] Using a retail price premium of US$1.50 (roasted pound) that existed for Starbucks Fair Trade Blend over its House Blend, Zehner shows that about 43 percent (65 cents out of 150) of the retail premium could be passed on to coffee growers. The rest of the premium goes to Fair Trade licensing, distribution, and processing margins, and taxes and other costs incurred in the producing country. Since the Fair

[5] This is based on a conversion rate of 1.2 between green coffee and roasted coffee.

[6] Transfair USA allows cooperatives to retain a maximum of US$0.26 of the US$1.26 they receive per pound of green coffee. Zehner (2002) optimistically assumes that the cooperatives only retain half of that maximum—US$0.13 per green pound.

Figure 4: The Distribution of the FairTrade Premium in the United States, 2002



Source: Zehner 2002 and author's calculations

Trade price to growers is fixed (US$1.26), changes in the costs and profit margins along the supply chain will affect the retail premium (that is, pushing it above or below US$1.50) and the percentage of that premium that growers receive.

From Zehner's calculations, it seems that a significant share of Fair Trade premium does reach the growers. There remains an important question, however, about whether the Fair Trade scheme is a more desirable method of transferring income from consumers to growers than a direct-transfer program. A large share of the retail price premium in Fair Trade still ends up either as companies' profits or as administrative costs associated with Fair Trade organizations.[7] Clearly, a socially conscious consumer would add more to growers' income by writing a check for US$1.50 than by buying a pound of Fair Trade coffee. Yet it is unclear whether consumers would psychologically favor donating directly over paying a price premium.

[7] For example, TransFair USA, a 40-employee organization, spent US$1.7 million on its salaries, travel, conferences, and publications in 2005 (TransFair USA 2006).

Is Fair Trade a Viable Solution for the Long Run?

From an economic perspective, the high prices Fair Trade offers would work as a "price floor" leading farmers who would otherwise seek alternatives to stay in coffee production. This might not be a problem if the availability of the Fair Trade premium were guaranteed in the long run. But for most growers it would be a mistake to make this assumption since Fair Trade is likely to remain a niche, and not a mainstream, market. Despite strong growth in recent years, the market share for Fair Trade coffee is still very small (less than 5 percent on average). Given that a number of surveys have shown that the percentage of consumers who are willing to pay more for ethical products is fairly high, this share reveals a clear gap between consumers' attitudes toward ethical products and their actual behavior in the marketplace (Pelsmacker et al. 2003). In the coffee market, as in most other product markets, the majority of consumers make consumption decisions according to product attributes such as price, quality, convenience, and brand familiarity rather than the ethical contents.

This implies that supply of Fair Trade coffee will continue to exceed its demand. One possible result is that the Fair Trade premium will fall: if too many producers try to move into this segment of the market, it would cease to be a niche capable of commanding high prices. Another possibility is that the premium will stabilize at some point and the opportunity to sell in the Fair Trade channel will be rationed, which has already occurred. Currently not all poor producers can move into the Fair Trade coffee market, and those who can only sell a certain percentage of their total output. TransFair USA reports that its growers sell an average of only 15 percent of their monthly output to Fair Trade buyers. Whether the premium falls or rationing occurs, simply supporting producers in the Fair Trade market cannot be a solution to the systemic problems affecting millions of farmers. The problem of everyone squeezing into the same niche that is perceived to be profitable—known as "the fallacy of composition"—has been a common phenomenon in commodity production for decades.[8]

Is Fair Trade Economically Efficient?

The idea of helping developing countries by paying higher prices for their products may have a certain intuitive appeal, but if one looks beyond the direct income transfer effect, it is far from evident that this practice is a globally desirable one.[9] In economics, a market transaction sometimes leads to an unequal distribution of wealth, owing to initial differences in individuals' endowments. This outcome, however, may be Pareto optimal (efficient) in the sense that no one can become better off without making someone else worse off. Redistributive efforts aimed at addressing the inequality can enhance equity on the one hand and lead to a decline in economic efficiency on the other. A reallocation of income distorts an otherwise more efficient market outcome despite the fact that it is morally attractive. Maseland and Vaal (2002) show that under certain circumstances, Fair Trade can be inferior to either free trade or even no trade in terms of efficiency. But there is always a debate on the trade-off between equity and efficiency, and each society must decide whether it is willing to increase equity by accepting some inefficiency.

The efficiency loss can also result from the exclusion of middlemen from the Fair Trade transactions. Bypassing middlemen, according to Fair Trade supporters, would reduce the leakage of benefits along the supply chain, allowing farmers to get higher prices for the coffee beans they sell. This argument ignores, however, a basic economic rationale that supports the very existence of middlemen: information asymmetry. It is well known that the coffee market is characterized by a fragmented supply base and unobservable quality. Without middlemen, who are usually very efficient in assessing coffee quality across suppliers, Fair Trade coffee buyers may face a higher information cost to search for and compare quality themselves.[10] When this information cost gets sufficiently high, buyers may stop searching and become "locked in" to a relatively small number of sellers whose quality may be unknown. This group of coffee growers, perceiving that the buyers are less able to access their quality information, would face a situation of "moral hazard" and would choose to sell their poorest-quality beans through the Fair Trade channel while reserving the best-quality beans for the traditional channel. Under these circumstances, an inefficient market equilibrium would result, which could eventually lead to the collapse of the Fair Trade market.

Policy Options

Current problems in the coffee market are complex, and an integrated strategy is required. Policy options should meet the short-term needs of poor farmers as they attempt to ride out the crisis and address longer-term solutions to overproduction in the market. The most effective long-term strategy to assist the majority of growers might be to explore other potential sources of income and to dismantle barriers to switching crops. Before that long-term goal can be achieved, however, Fair Trade should continue to be pursued.

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[8] A fallacy of composition arises when one infers that something is true of the whole from the fact that it is true of some (or even every) part of the whole. For example, increasing saving may be good for an individual, but if everyone saves more, it may become a bad thing for the whole economy since it will cause a recession by reducing consumer demand.

[9] The discussion here focuses only on pure economic aspects of fair trade, ignoring its impacts on environment or health.

[10] There may be a counterargument that the existence of a small number of middlemen may in fact block information flow and cause market inefficiency.

Building Social Responsibility and Consumer Trust

To enhance the performance of Fair Trade, it is important to create a large and sustainable consumer base. Since people generally make their purchasing decisions based on price and quality, Fair Trade organizations need to add a "social responsibility" dimension to coffee and incite consumer demand for it. They can do so by raising public awareness of Fair Trade issues through educational and mass media campaigns—a strategy that has been very successful in several European markets. In addition to influencing individual consumers' purchases, this strategy can be used to convince large buyers to switch to Fair Trade products. Institutional buyers such as government offices, hospitals, colleges, airlines, and company cafeterias can all have a significant impact on the market for Fair Trade coffee. In an institutional setting, individual consumers need not make a decision about how to "vote" with their money on ethical products, as the decision has already been made for them (Levi and Linton 2003).

Consumer trust in Fair Trade operations is also crucial for strengthening the Fair Trade coffee market (Raynolds 2002). No matter how charitable customers are, if they do not believe the premium they pay will help poor farmers, they will refuse to purchase Fair Trade coffee. Because the processes of international trade are relatively abstract and hidden from potential customers, this trust must likely be based on the existing commercial relationship between the retailer and the customer and, more important, trust in the Fair Trade organizations' labels. The relationship between the retailer and the customer could be a source of problems if it appears that too much of the premium ends up in profits. For example, a farmer is guaranteed to receive US$1.26 per pound for his or her coffee from Fair Trade, whether consumers pay US$5 or US$10 per pound for that coffee. Fair Trade organizations can help maintain the trust by keeping Fair Trade operations transparent and by ensuring that their certifications are not misused.

Mainstreaming

Mainstreaming Fair Trade coffee by targeting roasters and retailers may help expand the current Fair Trade consumer base. The roasters and retailers targeted could be those that already have a commitment to corporate social responsibility and those most open to adopting such principles. By indirectly highlighting the fact that farmers supplying the mainstream market are paid prices that do not even cover production costs, Fair Trade can successfully pose a serious reputation risk to coffee firms whose products are susceptible to consumer sensibilities. Experience in the United States has shown that some, especially small retailers and specialty coffee sellers, have been very quick to respond by expanding their Fair Trade sales. Others roasters and retailers have adjusted slowly. A few objected strongly to the term "Fair Trade coffee" since they perceived that it could imply other coffee was traded "unfairly." For various reasons, including a fear of losing a growing number of socially conscious consumers, some reluctant companies have subsequently changed their attitudes and started to purchase a certain percentage of their coffee from Fair Trade producers. For example, facing the potential threat to its public image, Starbucks ambivalently allocated 4 percent of its total purchases to Fair Trade coffee in 2004. The amount was more than doubled in 2005.

Transnational roasters are the slowest to adopt Fair Trade coffee, although they are the most vital in expanding this market. As powerful economic actors linking consumers in the rich world to poor producers, transnational companies could effectively enlarge the Fair Trade coffee market share through their existing marketing schemes. By doing so, however, they risk the high profit margins they currently enjoy from traditional coffee channels. So far, the four biggest coffee roasters—Kraft, Nestlé, Procter & Gamble, and Sara Lee—have played no significant role in Fair Trade since they all fear that demand for Fair Trade coffee is too limited to justify adoption. Public pressure revolving around a greater sense of social responsibility is thus critical in shaping the engagement of these companies in Fair Trade movement.

Limiting Supply

Beyond Fair Trade, an obvious solution to the crisis is to bring supply back in line with demand and to stabilize prices at more remunerative levels. This solution would require a combination of stock destruction, production control, and export retention by all coffee-producing countries. But recognizing the fact that there have been no effective supply management programs since the demise of the International Coffee Agreement (ICA) in 1989, such a collective action should be built on a reconstruction of mutual trust between producer countries and a secured financial support from consumer countries.

Oxfam calls upon an emergency measure that would destruct a proportion of the lowest-quality coffee (about 5 million bags) currently held as stocks in importing countries. A reduction in stocks would send an immediate signal to the market and lead to a estimated price increase of 20 percent over the 2000/01 average prices, providing between US$700 million and US$800 million in additional export income for coffee-producing countries (Oxfam 2002).[11] The destruction would cost approximately US$100 million. Possible financing of this action would have to be negotiated between the governments and companies involved. In addition to stock destruction, a retention of a portion of world coffee exports should be implemented. To facilitate the implementation of export retention programs, governments and donor agencies should terminate current policies favoring the expansion of coffee production, such as subsidies for land clearing, fertilizer use, and the introduction of higher-yielding hybrid trees.

Diversification

National policies and donor assistance should provide better support, in terms of credit, technical assistance, and market information, to allow small coffee farmers to diversify into other crops or into nonagricultural activities. Diversification is not simple issue as there are millions of coffee farmers and each one's situation is unique. Only when farmers themselves make the main decisions and when all resource implications for them are realistic would diversification be successful (Oxfam 2002). Information about which alternatives to coffee best suit local soils, climates, and market possibilities should be made readily available to the farmers who intend to switch crops. Extension advice about growing crops they are unfamiliar with and about marketing arrangements to help them get the best prices are also needed. Diversification for coffee farmers is likeliest to succeed when it is allied to broader national programs of agricultural diversification.

Moving out of coffee production is difficult because many potential alternatives (like cotton and sugar) are effectively ruled out as planting options. Current World Trade Organization (WTO) rules on agriculture fail to constrain rich countries from dumping subsidized farm produce on world markets, and thus restrict the markets for crops that farmers might use to diversify away from coffee production. New WTO rules may not be sufficient to solve the problem, but they do offer some hope for countries to diversify. No new rules are possible, however, without a commitment from developed countries at the Doha Round to remove both direct and indirect domestic and export subsidies on agricultural products and to ensure that farmers in developing countries have sufficient market access for diversification crops.

Empowering Farmers

To accompany efforts to limit supply, coffee-producing countries must enact measures to enhance the power of farmers who manage to stay in the coffee market. One way to do this is by building basic market infrastructure and providing market intelligence. Small farmers in remote areas of poor countries are not well placed to observe international market situations and are in a weak position next to traders who have that information. It is often difficult for farmers to question a price offer and to negotiate effectively, putting them in the position of price takers. Telephone, radio, and Internet are all possible ways of transmitting this information to farmers. In addition, extension advice can enhance farmers' position in the market by providing them with technical information about harvesting and tending of crops and advice about market opportunities (Oxfam 2002). Finally, more and easier access to credit and inputs should be provided to farmers so that they can rely less on traders for financing.

Improving Quality

Improving quality is central to restoring value to the coffee bean and the most significant international effort addressing the issue is the ICO's Quality Improvement Program (QIP). This program aims to stop the export of coffee below a certain quality and was welcomed by major coffee exporting countries. In order for the QIP to be successful, individual farmer's role in improving quality should be emphasized. Small farmers are believed to have better potential to produce good-quality coffee because they are more careful about picking ripe cherries than the operators of larger, mechanized plantations. But small farmers also need help with further quality improvement. Meanwhile, they need a mechanism that would reward them for the quality products they produce. To be most effective, a quality enhancement scheme needs to ensure that technical support is given to the poor

[11] To avoid prices fall below remunerative levels in the future, a longer-term strategy of contingency stock disposal should also be pursued (Oxfam 2002).

producers and a grading system is available. It should also be accompanied by a disposal program for lower-quality coffee that is ineligible for export. For countries with very limited internal markets, external support is needed to absorb this coffee.

Another way of improving quality is to address the information asymmetry by reestablishing the link between growers and middlemen. With efficient mediation by middlemen, growers would have a greater incentive to increase quality because they would be rewarded for the better-quality coffee they produce. Fair Trade buyers, on the other hand, would have a greater incentive to pay higher prices if higher quality were guaranteed. If overall market efficiency is restored, the price increase as result of quality improvement could offset the costs associated with the middlemen's operations, leading to a net gain for the whole system and for the growers. It is important that middlemen operate in a competitive manner through market regulations, otherwise a power imbalance in the coffee supply chain will be reintroduced, with the efficiency gains winding up solely in the pockets of the middlemen.

Assignment

Your assignment is to design an international coffee agreement for the purpose of solving the problems now facing coffee farmers. By representing different parties involved—coffee-producing countries, coffee-consuming countries, and NGOs—you are required to identify both the challenges and the opportunities in the negotiation process.

Additional Readings

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Chapter Seventeen
Preference Erosion, the Doha Round, and African LDCs (10-9)
by Wusheng Yu

Executive Summary

African least-developed countries (ALDCs) have enjoyed preferential treatment in exporting their agricultural products to developed countries. Reductions of agricultural trade barriers on a most-favored nation (MFN) basis by preference-granting developed countries may erode the benefits of these preferences. In particular, MFN tariff reductions coordinated through a World Trade Organization (WTO) agreement could cause serious preference erosions, and the current Doha Round of trade negotiations, aimed at ambitiously reducing agricultural trade barriers, may conclude with such an agreement.

The Doha Round has also declared a "development agenda," which emphasizes the interests of developing countries, including the LDCs. The so-called special and differential treatment of developing countries—of which trade preferences make up an important instrument—is designed to help realize the development agenda and counter any unwanted consequences from multilateral liberalization. Some WTO members have discussed extending trade preferences as a way to safeguard the interests of the LDCs, but the desirability and feasibility of this proposal have been debated with diverging views.

This case discusses a range of policy issues relating to preference erosion and WTO multilateral trade liberalization, including the role of preferences in promoting exports from the ALDCs, the extent and scope of likely preference erosion, and the possibility of extending preferences. It analyzes the positions and interests of several key stakeholders, especially the ALDCs, and presents policy options for tackling these issues. Specifically, the so-called July Package proposal for extending preferences has been interpreted as "deepening, widening, broadening, and strengthening" preferential treatment for ALDCs. An analysis of the quantitative estimates of the impact of these actions shows that preference erosion is indeed a concern for the ALDCs and that adopting the July Package will help the ALDCs cope with the erosion. Furthermore, costs to the preference-granting countries of adopting these measures are estimated to be modest, and trade diversion does not appear to be a serious concern for third countries.

Responding to concerns about preference erosion, a number of authors argue that enhancing preferences is not the right answer to the problem. They insist that the multilateralism championed by the WTO will eventually help the poorest countries and that transitory issues such as preference erosion can be handled by complementary nontrade policy measures, including effective development aid and investment in domestic infrastructure.

Your assignment is to propose a policy package that would tackle the preference erosion problem facing ALDCs, for discussion by the WTO. The package may include policies to strengthen preferences and/or complementary measures.

Background

African least-developed countries have enjoyed preferential treatment in exporting their agricultural products to developed countries. These preferences are attractive to the ALDCs because of the low trade barriers compared with those facing non-beneficiary countries. In many cases, the high MFN trade barriers established by developed countries support artificially high prices in their domestic markets. Tariff preferences make it possible for the beneficiary countries to enjoy these artificially high prices.[1] For instance, two systems of nonreciprocal trade preferences specifically concern the LDCs' exports to the EU—the African, Caribbean, Pacific countries (ACP) preferences and the Generalized

[1] Whether the difference between the high domestic price in a preference-granting country and the corresponding world market price is collected by the preference-receiving country is an empirical question. It is possible that this wedge is either partially or fully captured by the preference-granting country. In the discussion here, it is assumed that beneficiary countries receive at least part of the wedge.

System of Preferences (GSP) scheme, with the latter recently replaced by the Everything but Arms (EBA) initiative (European Community 2001a). The EBA covers all the LDC countries designated by the United Nations and removes all restrictions, including tariffs and tariff rate quotas, on virtually all exports from the LDCs to the European Union, without reciprocal action by the LDCs (see Yu and Jensen 2005 for an introduction to the EBA).

Other developed countries also offer preferences to the ALDCs, either through their own GSP schemes or through specially designed preference schemes. For example, the ALDCs receive preferences from the United States through the GSP program for the LDCs, whose terms are typically more favorable (duty-free access for covered exports) than those for non-LDC countries. Many ALDCs have also become eligible for the African Growth and Opportunity Act (AGOA). Like the United States, Japan grants preferences to the LDCs through its own GSP program. Unlike the U.S. GSP program, however, the Japanese GSP program does not grant duty-free access for the covered products, and average tariff rates for covered products are only slightly lower than the average preferential rates for non-LDC GSP countries. In general, judging from their product coverage and the depth of the margins of the preferences, the preference schemes of non-EU developed countries are not as favorable as the EBA.

Reducing agricultural trade barriers on an MFN basis, however, may erode the benefits of these preferences to the preference-receiving countries. On the one hand, MFN trade reforms—unilateral or multilateral—lower market access barriers and other protection measures for exports from the LDCs' competitors, thereby reducing the advantages of the preference-receiving countries over their competitors. On the other hand, the dismantling of trade barriers by the preference-granting countries may lead to lowered domestic market prices in these countries, thereby hurting high-cost, preference-receiving exporters. In addition, MFN trade reforms by large trading countries generally push up world market prices, thereby hurting net food-importing countries, including many of the ALDCs. When MFN tariff cuts are coordinated at the multilateral level—which has often happened following the conclusion of a GATT/WTO trade negotiation round—the effect on preference erosion can be serious.

One of the aims of the current Doha Round of WTO negotiations is to tackle the unfinished business from the Uruguay Round by ambitiously reducing agricultural trade barriers. At the same time the Doha Round has a "development agenda," which emphasizes the interests of developing countries, including least-developed countries. The so-called special and differential treatment of developing countries—of which trade preferences make up an important instrument—is designed to realize the development agenda and to counter any unwanted consequences of the multilateral liberalization process. Among the many proposals suggested during the lengthy negotiation process, extending trade preferences has been included as a way to safeguard the interests of the LDCs. For instance, in the so-called July Package of the WTO agricultural trade negotiations (WTO 2004, A-7), it is stipulated that "developed Members, and developing country Members in a position to do so, should provide duty-free and quota-free market access for products originating from least-developed countries." This proposal reflects the position of the ALDCs: they ask for further preferential treatment from developed and advanced developing countries and exemptions from reforming their own policies.

Debates on the desirability and feasibility of adopting this proposal are ongoing. Some worry about the inability of preferences to promote agricultural exports and economic development in the LDCs and doubt the value of preferences as an effective measure of special and differential treatment. In support of this argument, adherents often cite the poor export performance of the LDCs. These worries are compounded by the fear that the preferential approach may slow down the multilateral liberalization process and compromise or delay potential gains from a freer multilateral trading system. Others point out that developing countries in general could gain more from market access reforms based on the MFN approach and that the erosion of preferences (due to MFN liberalization) does not appear to be a big issue if substantial MFN reforms are conducted multilaterally. Still others argue that the LDCs do not necessarily gain from multilateral trade reforms, that the existing preferences are vital to their interests, and that any enhancement of such preferences would help mitigate any adverse effects from multilateral reforms. Lastly, many have noticed that various conditions, clauses, and rules attached to existing preference programs may have hindered recipient countries from taking full advantage of

these programs and therefore preferences should not be held responsible for the poor export performance of the LDCs. Instead of giving up on preferences altogether, some argue that efforts should be made to improve the rules associated with the preference programs to make them more effective.

Taking the July Package as the departure point, this case discusses a range of policy issues relating to preference erosion and WTO multilateral trade liberalizations. It analyzes the positions and attitudes of several key stakeholders and presents policy options for tackling the policy issues.

Policy Issues

Several policy issues are relevant to this analysis of the desirability of enhancing trade preferences. The first issue concerns the role of trade preferences in promoting exports and growth in the LDCs and whether or not they have actually been utilized. Next is the issue of whether preference erosion is serious enough to warrant talks about enhancing these preferences. The third issue is whether there is the needed "policy space" to implement the proposal. Lastly, some quantitative estimates on the costs and benefits of implementing the proposal are offered.

The Role of Preferences in Promoting Exports and Growth

Existing preference programs were often established for the purpose of promoting exports from the recipient countries. By stimulating exports from these countries, these preferences, it was hoped, would lead to economic growth there. Naturally, the debate on preferences not only concerns the associated short-term commercial value, but also the long-run implications for export-led economic growth. Moreover, as this favorable treatment is not meant to be constant and permanent—the reference MFN trade barriers in agriculture were reduced following the Uruguay Round and are expected to fall further as an outcome of the Doha Round—the wisdom of lobbying for this intrinsically temporary favor has also been questioned.

Judging from the poor export and general economic performance of the LDCs—whose export shares in total world trade have actually declined—it seems that preferences have not realized their declared purposes. It would be difficult to pin the causes of the poor performance solely on trade preferences, however, and to simply declare the demise of such programs. Any empirical analysis would have to establish a counterfactual scenario in which these economies had faced the MFN trade barriers and then compare this hypothetical scenario with reality.

Instead of debating the general role of preferences, a more tangible issue is the actual utilization of agricultural trade preferences by the recipient countries, which reveals the perceived value of preferences to the recipient countries. A few recent papers explore this issue by painstakingly collecting detailed trade data at tariff line levels and identifying whether exports under a specific tariff line in a certain market actually applied the available preferential tariffs. For instance, Inama (2004) observed underutilization of several trade preference programs (covering both agricultural and non-agricultural products) by the so-called QUAD countries (Canada, the EU, Japan, and the United States). The study argues that the value and effectiveness of the preferences available to LDCs' exports are discounted by the observed low utilization rates—a finding that is probably caused by the study's failure to take into consideration the fact that exports from beneficiary countries may be eligible for multiple preference programs offered by the same preference-granting country (that is, multiple eligibility). Unlike the Inama study, a 2004 study from the Organization for Economic Cooperation and Development (OECD) focuses exclusively on the utilization of agricultural preferences granted by the EU and the United States. By observing multiple eligibility, the study finds that preference utilization rates are actually quite high for both the EU and the U.S. preference programs. For the EU programs, the overall utilization rate exceeded 89 percent in 2002, and half of the eligible imports that did not use preferences entered the EU mostly through duty-free quotas and tariff suspensions. For the U.S. programs, the utilization rate was 88 percent in 2002. Some of the eligible exports entered the U.S. market under MFN rates owing to rules of origin and compliance costs, whereas other eligible exports opted for the low available MFN rates.

To summarize, when the multiple eligibility phenomenon is accounted for, it appears that agricultural trade preferences have indeed been used, implying that developing countries derive commercial value from these programs. The main

problem associated with these programs is the observed low export volumes, which are probably partially related to the limited product coverage of existing preference programs.[2] Improving trade preferences by enlarging product coverage of such programs and by asking more countries to grant such preferences could expand exports from the recipient countries.

Preference Erosion and Multilateral Liberalization

In addition to the apparent usefulness of preferences to the recipient countries, the case for their enhancement can be further illustrated by analyzing the issue of preference erosion in the presence of multilateral liberalization.

Is preference erosion a legitimate concern? How large would the negative effect associated with preference erosion be? Several recent studies have discussed the impact of multilateral liberalization or unilateral MFN liberalization by individual preference-granting countries on preference-receiving countries. Wainio and Gibson (2004) point out that the exact impact of MFN tariff cuts by the United States on countries receiving its nonreciprocal preference programs depends on the scope of the preferential treatment granted, the size of preference margins, and the depth of the MFN tariff cuts. They show that overall the beneficiary countries of the U.S. preference programs would gain from MFN tariff liberalization. For countries highly dependent on preferences, however, the negative effects of preference erosion outweigh the positive effects of MFN tariff liberalization. A slightly later study by Wainio and Gehlhar (2004) provides a detailed description of U.S. nonreciprocal preference programs, covering eligible products and countries, margins of the preferences (compared with the MFN rates), products excluded from the preferences and the applicable MFN rates, and the export patterns of the beneficiary countries in the U.S. market. Based on this detailed data analysis, the study examines whether beneficiaries of U.S. nonreciprocal trade preference programs gain more from cutting MFN rates on products excluded from these programs or lose more from the erosion of the preferences that they do enjoy. They conclude that developing countries as a whole would gain market shares in the U.S. market from substantial MFN tariff liberalization and that it is counterproductive for these countries as a group to oppose MFN liberalization. In drawing this conclusion, they emphasize the potential gains from liberalizing those products that are not included in the preference programs. Their results also show, however, that there would be only minor export expansions in the U.S. market for the LDCs (Wainio and Gehlhar 2004, Tables 7–9), and their share in total U.S. imports would drop after MFN reforms, confirming the likely vulnerable position of the LDCs in the upcoming multilateral trade liberalization.

Unlike the U.S. preferences, which have incomplete coverage for agriculture and food products, the EU preferences granted to the LDCs provide broader product coverage and have recently been enhanced with the adoption of the EBA initiative. Not surprisingly, the amount of agricultural exports and the range of products exported from the ALDCs to the EU far exceed those to the United States. Yu and Jensen (2005) assess the impact of the EBA initiative on the ALDCs and show that further multilateral trade liberalization may erode the EBA preferences. Because the EBA extends product coverage only slightly beyond that of previous preference programs, the welfare impacts of the EBA on the ALDCs are shown to be small. Moreover, these small gains are likely to disappear if the EU adopts MFN trade policy reforms, with the result that the ALDCs would actually be worse off. Extending the analysis to a multilateral trade liberalization scenario reinforces the finding that the LDCs may well lose owing to preference erosion and higher world market prices for their imports. These results are echoed in Bureau et al. (2004). They find that the implementation of the "Harbinson proposal" would lead to a slight welfare gain (0.3 percent) for the poorest countries. The gain is not evenly distributed, however—Sub-Saharan African countries as a whole would experience a slight loss (0.1 percent) owing to preference erosion and higher costs for imported food.

Because of the differences in the EU and U.S. preference programs and the narrower focus on the ALDCs by the Yu and Jensen study, the above

[2] This is especially the case for those excluded products that the LDCs have the potential to export and that face high tariffs. For instance, agricultural products excluded from the U.S. preference programs generally have higher tariffs than those products included in the programs. It should be noted, however, that in some instances, even given the enhanced preferential treatment, the LDCs may still not be able to realize their potential, owing to poor infrastructure, high domestic transaction costs, and inadequate investment.

cited studies reach different policy implications. Whereas the Wainio and Gehlhar study finds that MFN reforms would lead to more gains in the U.S. market for developing countries as a whole and that multilateral liberalization is generally a better option for developing countries, the Yu and Jensen study concludes that the ALDCs may well lose from this process. It appears from the results of Wainio and Gehlhar, however, that the LDCs' share in the U.S. import market would decline following the MFN reform, a point that is consistent with Yu and Jensen. The Wainio and Gibson study provides indirect support to this point as well by concluding that countries highly dependent on trade preferences may lose from preference erosion. Therefore, there seems to be some agreement about the LDCs' vulnerability in coping with MFN market access reforms by preference-granting countries.

Stakeholders

So far, the analysis has focused on the African LDCs, the obvious stakeholders who are in danger of suffering from preference erosions. They are not the only stakeholders in this discussion, however, as preference-granting developed countries, developing countries not covered in nonreciprocal preference programs, and the General Agreement on Tariffs and Trade (GATT)/WTO are all concerned and involved.

Preference-Granting Developed Countries

The interests of the preference-granting developed countries are multidimensional, ranging from maintaining tariff revenues, supporting domestic production, and balancing the interests of other trading partners to avoiding compromising their positions in the multilateral negotiations. In addition, geopolitics and non-economic strategic interests may also influence the actions of these countries. Here, the discussion is limited to these countries' economic concerns.

First and most obviously, further reducing preferential trade barriers will lead to reduced tariff revenues for the preference-granting countries, provided that the goods under the preference programs are currently imported, with bigger losses associated with larger current preferential imports. Second, depending on the size of the current preferential imports and the cuts to current preferential trade barriers, domestic producers in the preference-granting countries may be hurt by a surge in expanded preferential imports. This disguised "cost" can be desirable for consumers, however, if the increased imports help to bring down artificially high domestic prices. Third, in the case of a preference-granting country also providing less favorable preferences to non-LDC developing countries, reducing preferential trade barriers to the LDCs will "erode" the preference enjoyed by these other countries. This erosion can become a concern for the preference-granting countries if they want to keep those preferences attractive to the non-LDC developing countries. For instance, the transitory measure adopted in the EBA regarding sugar exports from the LDCs may be more a response to the demands from non-LDC ACP countries than to those from domestic producers in the EU. Lastly but perhaps most important, a developed country's attitude toward preferences is an integrated component of its overall negotiation position in the WTO multilateral talks. Therefore, whether or not a country is willing to enhance its nonreciprocal preferences will depend on how that country evaluates the influence of the change on its overall negotiation objectives and strategies in the multilateral talks.

Developing Countries Not Covered in Nonreciprocal Preference Programs

For developing countries that are not covered in any preference program, there are two questions: Does enhancing preferences for the LDCs divert trade away from these countries? And can the loss due to diverted trade be made up through MFN cuts by the preference-granting countries? Answers to these questions depend on the composition and pattern of exports of these countries vis-à-vis those of the LDCs. If a developing country is competing directly with LDCs in the same export market, then further reducing preferential tariffs for the LDCs may divert trade away from that country. MFN tariff cuts by the same developed country may, however, make up for the diverted trade flow.

WTO Multilateral Trade Negotiations

The delays (and the recent suspension) in the current WTO agricultural trade negotiations demonstrate the difficulties of reaching an agreement when negotiating parties have varying interests in a host of negotiation areas. A member's ability to influence the negotiation agenda in the presence of diverging views and interests is decided largely by its power and negotiation capacities.

Traditionally, large rich countries and blocs of rich countries have had the power and negotiation capacities to influence the agenda of past trade talks. In the Doha Round, large developing countries have started to form alliances (such as the Group of 20, or G-20) for the purpose of putting their interests on the negotiation table. The LDCs, however, have remained more or less on the fringe of these talks because of their lack of negotiation capacities and skills. It is thus no surprise that the issue of preference erosion has not been taken more seriously by the major players in the negotiations (of course, the nonreciprocal nature of preferences also makes it difficult for the LDCs to engage in give-and-take bargaining). But by not taking the issue of preference erosion seriously, the Doha Round runs the risk of further alienating the poorest members of the WTO, who are supposed to benefit from the round's development agenda.

Policy Options for Improving ALDCs' Market Access

The evidence suggests that agricultural trade preferences have been widely used and that preference erosion is a legitimate concern from the perspective of the ALDCs (if not for developing countries as a whole). The next logical question is how the preferential treatment—as part of the special and differential treatment stipulated in the Doha development agenda—can be improved. There are both trade-related and non-trade-related policy options. Here, the discussion is limited to how LDCs' market access can be improved through enhanced preferences.

Deepening, Widening, Broadening, and Strengthening Agricultural Trade Preferences

The July Package text entails a full set of trade policy options to tackle the preference-erosion issue. First, developed countries can "deepen" their preference programs by granting the ALDCs duty- and quota-free market access to all agricultural products covered in existing programs. Second, developed countries can "widen" the coverage of their preference programs by extending duty- and quota-free access to those agricultural products that have not been covered in existing programs. These two types of actions essentially imply EBA-style preference programs by all developed countries to the ALDCs. Third, preferential market access for ALDC exports can be "broadened" to include advanced developing countries in the group of preference-granting countries. Lastly, preference-granting countries can "strengthen" existing preference programs and new preference initiatives by making them permanent and unconditional. One possibility is to develop a set of WTO rules that would be applied to all preferential programs targeting the LDCs. The new rules should include simpler rules of origin and minimum administrative costs for exporters. They should not contain any eligibility conditions (beyond requiring recipients to be LDCs) that would exclude certain LDCs from the program or safeguard clauses that may discourage recipient countries from investing and from gaining substantial market shares.

Next, is there scope for implementing such a proposal, given the current state of existing preference programs? The answer here is an emphatic yes. Broadening preferences by including advanced developing countries is possible, as these countries generally have not yet provided the LDCs with extensive and substantial trade preferences. Strengthening existing trade preferences is not only needed, but also feasible because there are many problems associated with individual programs that limit their effectiveness in promoting exports from the recipient countries. The possibility of deepening and widening preferences granted by developed countries, however, deserves some elaboration.

Existing Preference Programs and the Scope for Implementing the Proposed Policy Measures

In the case of the EU, there seems to be limited room for improving its preference programs because of the recently adopted EBA initiative. Upon fully implementing the EBA (including phasing out the transitory measures for sugar, bananas, and rice), the EU will be in a good position to argue for EBA-style preferences from all developed countries and advanced developing countries.

The cases of Japan and the United States are quite different from that of the EU. There, deepening and widening preferences for the ALDCs will require meaningful actions. The United States will need to expand existing programs to cover currently excluded products. The Japanese programs will need to both expand product coverage and deepen the preference margins for covered products.

The United States grants preferences to the ALDCs through the GSP program for the LDCs, which is typically more favorable (duty-free access to covered exports) than that for the non-LDC countries. Many ALDCs have also become eligible for the African Growth and Opportunity Act (AGOA). Data from the U.S. International Trade Commission (USITC)[3] show that out of about 1,800 U.S. tariff lines, about 400 MFN tariff lines are duty free. Among the remaining tariff lines, about 1,100 lines are duty free for the LDCs through the U.S. preference programs. These preferences, however, lower the simple average tariffs faced by the LDCs only marginally (from the overall simple average of 9.7 percent to the simple average of 5.6 percent for the GSP-LDC countries). This is because the dutiable tariff lines not covered in the preference programs generally have higher tariffs than those lines covered in the preference programs. Therefore, there is scope for extending those preferences to the dutiable lines that are not covered in the current U.S. preference programs.

Like the United States, Japan grants preferences to the LDCs through the GSP program.[4] Before 2003, this program granted preferences to about 300 tariff lines (out of about 2,000 lines) for the LDCs, reducing the average duty for the LDCs from 15.6 percent to 14.2 percent. For those lines not covered by the GSP, there are about 400 duty-free lines and more than 1,300 dutiable lines. Those uncovered dutiable lines generally have higher tariff rates. Unlike the U.S. GSP program, the Japanese GSP programs did not grant duty-free access for the covered products, and the average tariff rate for covered products was 9.8 percent for the LDCs, only slightly lower than the average preferential rate for non-LDC GSP countries. Since 2003 Japan has expanded GSP product coverage for the LDCs by adding about 200 products, or about 10 percent of total tariff lines. So it seems that Japan would have to make extensive concessions to the LDCs in order for them to enjoy universal duty- and quota-free access to its market.

In addition, there is ample room for strengthening these preferences. A long list of difficulties associated with applying the existing preferences can be compiled, ranging from eligibility rules, product coverage, and rules of origin to certainty of commitments and the number of schemes. In practice, some of these conditions and clauses play similar roles as nontariff barriers in limiting export expansion from the beneficiary countries.

Take, for example, the recent EBA initiative. The EBA largely retains the safeguard measures specified in the GSP of the EU, with some amendments. Most notable among the amendments is the addition of the situation of "massive imports into the EU market" as a trigger for withdrawing the preferences. With regard to three sensitive products (sugar, bananas, and rice), the EU is allowed to suspend preferences entirely if imports cause serious disruptions to the EU's mechanisms for regulating these products.[5] In addition, the rules of origin specified in the GSP also apply to the EBA initiative. Likewise, the U.S. and Japan GSP programs contain various preconditions and clauses. According to USITC data (http://www.usitc.gov), the preferences offered through the AGOA are meant for all 48 Sub-Saharan African countries, but until recently only 37 countries from this region had gained eligibility. Likewise, only 41 LDCs are deemed eligible for its GSP-LDC preferences. The Japanese GSP program also contains safeguard clauses and a graduation clause to exclude one country's exports from the program when they reach a certain market share and a certain minimum value.

These measures and preconditions are clearly detrimental to creating a stable trading environment for the ALDCs, and they may discourage producers in the ALDCs from committing needed investments to reduce their high production costs. Panagariya (2002) argues that it is precisely these measures that have rendered preferences ineffective. Strengthening the legal status of the preferences by making them universal, permanent, and binding through WTO rules could well boost their performance.

[3] These are drawn from the summary compiled by Brenton and Ikezuki (2004) and Wainio and Gehlhar (2004).

[4] Numbers in this paragraph are calculated from the United Nations Conference on Trade and Development (UNCTAD) TRAINS database and are drawn from Brenton and Ikezuki (2004).

[5] Serious disruptions refer to, among other things, reduction in the market shares of European producers, reduction in their production, increases in their stocks, closure of their production capacity, bankruptcies, low profitability, low rate of capacity utilization, reduced employment, increased imports, and lowered prices (European Community 2001a, b).

Estimated Impacts of Implementing the Proposed Policy Measures on the Stakeholders

This section presents hypothetical scenarios of deepening, widening, and broadening agricultural trade preferences for the ALDCs, calculated using a quantitative simulation framework. Because of the multiregional and multisectoral nature of the issues to be analyzed, such scenarios are simulated within a global computable general equilibrium model named GTAP (Hertel 1997, Chapter 2). The GTAP model is accompanied by a global data set commonly known as the GTAP database (Dimaranan and McDougall 2002). The main components of the database are detailed input-output tables for all the regions and countries included in the data set; consistent bilateral trade flows among all the regions and countries; a protection data set that covers ad valorem tariff equivalents, export subsidies, and domestic support measures; and macroeconomic aggregates. Together, these components give a snapshot of the world economy at the base year of the database, and all the usual equilibrium conditions are satisfied in the database.

The latest version of the database, version 6, contains data for 86 regions and 57 commodities for the year 2001, including a fairly detailed breakdown of agricultural and food products. This study applies an aggregated version of this most recent GTAP database, with 21 aggregated regions and 24 aggregated products. The six individual African LDCs (Madagascar, Malawi, Mozambique, Tanzania, Uganda, and Zambia) are included in the aggregated database as one group (with the short name of SSA-1), whereas other African LDCs are largely included in the aggregated Rest of Sub-Sahara African (SSA-2) region.[6] Among the non-LDC regions are influential agricultural trading countries and regions such as Argentina, Australia and New Zealand, Brazil, Canada, China, the EU-25, India, Japan, and the United States. Agriculture and food products in the original GTAP database are incorporated in the aggregated version as separated items, including paddy rice, wheat, cereal grains, fruits and vegetables, oilseeds, plant fibers, other crops, other animal products, bovine meats, other meats, vegetable oil, dairy, processed rice, sugar, other processed food products, and beverages and tobacco. In addition to these, nonagricultural products are aggregated as natural resources, textiles and clothing, manufacturing, and services.

Scenarios of Implementation of the Policy Measures

The deepening, widening, and broadening scenarios can be formulated as the reduction or removal of relevant tariffs facing exporters from the ALDCs. In this study, the GTAP version 6 database is viewed as the initial equilibrium point of the world economy. After the shocks pertaining to the policy scenarios are applied to the model, new equilibria are computed and updated data sets corresponding to and describing the new equilibria are generated. The differences between the original data set (the base case) and the updated data sets are then summarized and viewed as the effects attributable to the policy changes.

Three hypothetical scenarios are considered. Scenario 1 is a multilateral market access liberalization scenario in which all the non-LDC regions contained in the aggregated data set are assumed to halve their MFN tariff rates for all agricultural and food products. To be consistent with the July Package proposal, the ALDCs are not assumed to reduce their own market access barriers. Such a scenario sets a benchmark against which the subsequent broadening and deepening scenarios can be compared.

Scenario 2 is the deepening and widening scenario. In addition to the MFN market access reforms as simulated in scenario 1, advanced economies (Australia and New Zealand, Canada, the EU-25, Japan, the Rest of East Asia [mainly South Korea and Taiwan], and the United States) are assumed to deepen and widen their preferential treatment for the ALDCs to the extent that all tariffs imposed on exports from the ALDCs are eliminated. This scenario essentially assumes an EBA offer from all advanced countries. The initiator of the EBA (the EU-25) is assumed to implement the EBA in its

[6] The aggregated SSA-2 region contains 43 individual countries, of which 33 are LDCs and the rest are non-LDCs. Because the GTAP version 6 database does not provide a further breakdown of this region, we are forced to treat this as an aggregated LDC region. Any preference granted by developed and advanced developing countries in practice and in the hypothetical scenarios of the study is assumed to be available to the non-LDC countries in SSA-2 region as well. Consequently, numerical results obtained for this aggregated region are for both the LDC members and non-LDC members of this group. Nevertheless, because the majority of countries in this group are LDCs and most of the non-LDC members also receive preferences, it is expected that this is a meaningful grouping.

entirety, implying that the transitory measures on sugar, rice, and bananas are removed immediately. For other advanced countries, this scenario implies widening product coverage of their respective preference programs and deepening preference margins for covered products. Because the shocks contained in scenario 1 are also included in scenario 2, the differences between results obtained from scenarios 1 and 2 can then be attributed to the deepening of trade preferences.

Scenario 3 is the broadening scenario. The design of this scenario again allows for comparison with the previous scenarios. Here, both the multilateral market access reform shocks and the deepening shocks are included, in addition to the new shocks involving the extension of EBA-style preferences to the ALDCs by several large developing economies, including Argentina, Brazil, China, India, Mexico, and the Association of Southeast Asian Nations (ASEAN).

Results

Simulation results from the three policy scenarios are summarized in Tables 1 and 2. Here the focus is on the changes in total exports from the two ALDC regions and the resulting changes in economic welfare measured in equivalent variations. To facilitate discussing the individual effects of multilateral market access reforms, the deepening and widening of preferences, and the broadening of preferences, results for scenario 1 are calculated as changes/percentage changes from base case data, whereas results for scenario 2 (scenario 3) are computed as changes/percentage changes from the updated dataset obtained from scenario 1 (scenario 2). In other words, the results reported for scenario 2 are due to the deepening and widening of preferences only, whereas the results reported for scenario 3 are due to the broadening of preferences only.[7]

Scenario 1. As Table 1 shows, total agricultural and food exports from both SSA-1 and SSA-2 would drop by more than 6 percent under scenario 1. Underlying this aggregate change are near-universal declines in exports of all agricultural and food products. The largest percentage changes are in fruits and vegetables, bovine meats, other meats, and sugar. The most significant changes in terms of trade volumes, however, are in other crops, other food, and fruits and vegetables, because these are the products in which the two ALDCs have substantial base case exports. For instance, the decreases in exports of other crops of 5.9 percent for SSA-1 and 4.4 percent for SSA-2 are equivalent to losses in export volumes of around US$60 million for the former and US$150 million for the latter. Among the few exceptions to this declining pattern are the slight increases in exports of rice and plant fibers. Only the increases in plant fiber exports, however, seem to be meaningful given that the base case exports of rice are very small.

Based on these results, it seems that different stakeholders will be affected differently by multilateral market access reforms. The two African regions would lose part of their exports in the wake of the assumed reforms without further preferences, whereas world trade in virtually all agricultural and food products would increase. In fact, market access reform would boost the total value of world exports by almost 6 percent, implying that the ALDCs' shares of agricultural exports would shrink relative to the increased world trade.

Scenario 2. Deepening and widening the trade preferences granted by developed countries would reverse the negative export effects on the two ALDCs caused by the multilateral market access reform. Results from scenario 2 (Table 1) show that compared with scenario 1, total exports of agricultural and food products from SSA-1 would increase by more than 17 percent, whereas those from SSA-2 would increase by around 30 percent. In dollar terms, following the deepening and widening action, total agricultural and food exports from SSA-1 would be more than US$2.4 billion, representing an increase of more than US$360 million from scenario 1. For SSA-2, the increase is almost US$2.5 billion. These increases more than make up for the losses sustained from the multilateral market access reform.

[7] The results presented in this section are computed without including the Japanese tariff on rice in the deepening and widening scenario. This warrants specific comment. The Japanese rice tariff is set at a prohibitive level. In the multilateral market access scenario, the assumed halving of this tariff would result in a new tariff that is still prohibitive. Meanwhile, a complete deepening scenario would remove this tariff for the two African regions. As a result, exports and hence outputs of rice in the two regions would increase dramatically, leading to massive resource reallocation into rice production. Considering the size of the Japanese rice market, however, it is not credible for Japan to maintain a prohibitive tariff on all countries but the ALDCs. As such, in the scenarios reported here, this possibility is excluded.

The increase in total agricultural exports would not be evenly distributed across products. Those products important to the ALDCs that are excluded from the current preference programs would experience the greatest increase. In percentage terms, the increases are the highest for meat products, dairy products, and sugar for both regions. In addition, exports of fruits and vegetables, as well as oilseeds, would increase significantly for SSA-2. Most notable among the changes are the increased exports of sugar, reaching more than US$400 million for SSA-1 and around US$2.5 billion for SSA-2, owing to the high market access barriers for non-LDC exporters (hence, large preference margins) and the substantial trade barriers maintained by several advanced countries for sugar exports from the ALDCs. In contrast, exports of several products from the two ALDCs would decrease (such as plant fibers from both regions and other crops from SSA-2) because of the intersectoral resource movement triggered by the expansion of preferential coverage and the deepening of existing preference programs.

Scenario 3. Those developing countries chosen for the broadening scenario (scenario 3) generally do not offer extended preferential treatment targeting the ALDCs. Their imports from the two African regions are very small, and in some cases no such imports exist according to the GTAP database. So the resulting changes in exports from the ALDCs in scenario 3 not only depend on the MFN market access barriers of the chosen developing countries, but are also related to the initial export volumes from the ALDCs.

The overall increase in agricultural exports due to the broadening of trade preferences would be around US$130 million for SSA-1 and US$260 million for SSA-2. The main sources of these increases are fruits and vegetables, plant fibers, other crops, and meat products. In contrast, exports of sugar, rice, and oilseeds from both regions actually decrease slightly. It should be noted that the overall increases in exports reported for scenario 3 are much smaller than what are obtained from the deepening and widening scenario (scenario 2). Although this result may have something to do with the Armington trade structure employed in the model and with the fact that there is little agricultural trade between the ALDCs and the developing countries used in the scenario, the market size of the developed countries and their role as the ALDCs' traditional markets may be more responsible for the relatively larger export effects from the deepening and widening scenario.[8] This result seems to discount the optimism about South-South trade, at least in the short and medium run.

Welfare effects. Although the multilateral market access reforms (scenario 1) would benefit most non-LDC countries, the welfare effects turn out to be negative for the two African regions (losses of about US$50 million and US$184 million for SSA-1 and SSA-2, respectively), a result that is consistent with Yu and Jensen (2005). To understand this result, the focus should be on the negative export price effect, which dominates the total terms-of-trade effect for both regions. This negative export price effect is due to two reasons. On the one hand, multilateral market access reforms would lead to lower prices in the export markets and hence lower prices for those ALDC exports covered in preference programs. At the same time, lowering MFN market access barriers would lead to higher prices for exports from countries not receiving preferential treatment. Hence, non-LDCs would be able to crowd out exports originating from the ALDCs. On the other hand, preferential access granted to the ALDCs would actually "trap" their exports and prevent them from shifting to other markets, thereby further dampening the prices of ALDCs' exports. In addition, the ALDCs may be hurt by higher world market prices for their imports.

The negative welfare effects on the two African regions would be more than offset by the deepening of the developed countries' existing preference programs. Results from scenario 2 show that such a move by the developed countries would not only result in improved terms of trade for the ALDCs, but also lead to efficiency gains for them. For SSA-1, the total welfare improvement from scenario 1 would be more than US$110 million, whereas for

[8]A simple sensitivity analysis with respect to the Armington elasticities has been carried out by re-running the three experiments with a new set of elasticities that are twice as large as the original ones used in the GTAP model. Results from these simulations show that the increases in agricultural exports from the African LDCs will be higher under both the deepening and broadening scenarios compared with those reported in Table 1. Nevertheless, higher Armington elasticities boost exports under the deepening scenario much more than under the broadening scenario, suggesting that the qualitative conclusion reported in the main text is quite stable with respect to the degree of substitution in the Armington structure.

SSA-2 it would be almost US$800 million. Most of these gains are due to improved terms of trade, with the positive export price effects being the dominant factor.

Whereas deepening preferences by the developed countries seems to generate substantial benefits for the ALDCs, according to the simulation results, broadening preferences would not generate similar export expansion and welfare gains for them. The additional welfare gain to SSA-1 from the broadening scenario would be a little more than US$50 million, and that to SSA-2 would be around US$90 million.

Effects on preference-granting and other countries. Deepening trade preferences by developed preference-granting countries would lead to small terms-of-trade losses to these countries. For instance, the EU-25 would suffer a welfare loss of US$582 million (see Table 2). This loss, however, is much smaller than the gains obtained from the multilateral market access reforms (scenario 1). On balance, the developed countries would gain significantly from multilateral market access reforms, even taking into consideration their losses from deepening their preference programs to the ALDCs. For non-LDC developing countries, the negative impact of more favorable preferential treatment for the ALDCs would also be small, implying that the expansion of exports from the ALDCs would generally not be a big concern for them. For example, the economic welfare of China and India would be reduced by only about US$4 and US$17 million, respectively. Thus, broadening trade preferences to the ALDCs would lead to very minor welfare losses for the advanced developing countries.

Overall, other countries' costs of broadening and deepening preferences for African LDCs appear minor. Although not presented here, the trade diversion effects are also small, a result that is consistent with the ALDCs' very small exports in total world trade. Therefore, the concern about trade diversion does not appear to be a major issue.

Alternative Policy Measures

In addition to or instead of the deepening, widening, broadening, and strengthening of trade preferences for the ALDCs, the ALDCs may consider domestic policy changes and institutional reforms aimed at creating an enabling environment for their export-oriented industries and at eliciting adequate supply responses.

Responding to concerns about preference erosion, a number of authors have suggested that enhancing preferences is not the right answer to the problem. They insist that the multilateralism championed by the WTO will eventually help the poorest countries and that transitory issues such as preference erosion can be handled by complementary non-trade policy measures, including effective development aid that aims at tackling prevalent supply response constraints in the ALDCs and at creating supportive and enabling domestic infrastructure.

Assignment

Your assignment is to propose a policy package that would tackle the preference erosion problem facing ALDCs, for discussion by the WTO. The package may include policies to strengthen preferences and/or complementary measures.

Additional Readings

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Table 1: Changes in Exports of Selected Agriculture and Food Products from SSA-1 and SSA-2

	Scenario 1				Scenario 2				Scenario 3			
	Export volume (million US$)		% change		Export volume (million US$)		% change		Export volume (million US$)		% change	
Product	SSA-1	SSA-2	SSA-1	SSA-2	SSA-1	SSA-2	SSA-1	SSA-2	SSA-1	SSA-2	SSA-1	SSA-2
Grains	35.8	48.4	-2.6	-9.5	36.3	48.6	1.3	0.4	36.3	49.1	0.1	0.9
Fruits and vegetables	130.0	810.1	-10.9	-8.3	130.2	1,109.0	0.2	36.9	212.3	1,192.5	63.0	7.5
Oilseeds	25.2	236.1	0.7	-21.5	25.5	403.7	1.2	71.0	25.2	398.8	-1.3	-1.2
Plant fibers	112.9	896.5	0.3	0.5	108.3	841.8	-4.1	-6.1	113.3	910.7	4.6	8.2
Other crops	1,040.6	3,322.0	-5.9	-4.4	1,078.7	3,047.9	3.7	-8.3	1,137.6	3,104.8	5.5	1.9
Bovine meats	1.6	25.8	-26.0	-14.4	1.9	24.4	17.6	-5.5	2.1	25.0	12.6	2.7
Other meats	7.5	36.4	-11.4	-9.4	9.7	53.8	28.9	47.6	14.6	61.6	50.5	14.5
Vegetable oils	6.8	142.7	-8.4	-7.8	6.5	130.0	-4.5	-8.9	6.8	129.4	5.5	-0.5
Dairy	1.1	29.3	-8.0	-5.8	3.3	47.9	191.6	63.5	3.3	49.1	1.1	2.6
Rice	5.7	30.9	2.3	1.8	5.5	28.8	-3.7	-6.6	5.3	28.5	-3.8	-1.1
Sugar	93.6	169.9	-21.3	-49.8	411.6	2,507.8	339.9	1376.1	402.6	2,499.4	-2.2	-0.3
Other food	508.3	2,058.1	-5.6	-5.6	513.7	2,034.3	1.1	-1.2	511.4	2,079.8	-0.4	2.2
Total agrifood	2,052.1	8,226.2	-6.5	-6.9	2,415.3	10,697.5	17.7	30.0	2,555.7	10,960.3	5.8	2.5
Total	6,569.2	52,985.5	-0.7	-0.5	6,674.8	53,948.0	1.6	1.8	6,718.2	54,071.2	0.7	0.2

Source: Simulation results.

Table 2: Welfare Results for Selected Countries and Regions (million US$)

	Scenario 1			Scenario 2			Scenario 3		
Country/region	Efficiency	Terms of trade	Total	Efficiency	Terms of trade	Total	Efficiency	Terms of trade	Total
Australia and New Zealand	4.2	566.2	545.3	1.2	5.8	6.1	-0.2	-6.5	-6.8
China	830.8	-164.6	575.2	3.9	-1.6	-4.4	3.0	-6.1	-2.6
Japan	3,263.5	-536.2	2,766.7	-4.3	-37.3	-49.3	2.0	-0.7	0.5
Rest of East Asia	1,141.5	-32.5	1,067.6	-81.5	-27.0	-109.8	2.1	-0.9	1.1
ASEAN	554.7	289.6	760.9	-2.6	9.8	7.1	-7.5	-24.1	-31.2
India	830.8	-216.0	610.9	-6.9	-8.1	-16.6	22.5	-26.9	-4.6
Canada	674.5	-112.9	551.3	1.4	9.7	11.0	0.3	-2.4	-1.8
USA	87.5	957.0	1,292.6	14.5	-68.3	-99.4	2.1	-10.7	-18.4
Mexico	321.2	-208.1	108.9	-0.1	6.3	5.8	4.2	-3.5	1.0
Argentina	46.3	259.4	270.1	-0.1	-2.4	-2.2	0.0	-1.8	-1.6
Brazil	162.2	888.0	1,098.6	-3.0	-5.4	-10.3	1.2	-5.0	-4.3
EU-25	5,586.4	-1,255.9	4,276.2	-72.6	-494.1	-582.3	15.5	-33.0	-19.9
SSA-1	-1.4	-42.5	-50.0	3.9	91.4	111.8	-1.1	48.2	53.5
SSA-2	-38.9	-126.8	-184.2	168.2	527.9	772.4	17.0	66.4	91.2
World	16,400.2	-12.2	16,387.8	3.6	-4.6	-1.6	62.5	-0.2	62.3

Source: Simulation results

Chapter Eighteen
Meeting Sanitary and Phytosanitary (SPS) Standards: What Can China Do? (10-10)

by Fuzhi Cheng

Executive Summary

It is widely recognized that rising sanitary and phytosanitary (SPS) standards have created numerous obstacles to the international exchange of agricultural commodities. The issue is of particular importance for developing countries with abundant agricultural resources as they seek to expand their exports of labor-intensive, high-value-added agricultural products to the more lucrative developed-country markets. Agricultural exporters in developing countries are often required to meet stringent developed-country SPS standards. Not only are these standards much higher than international standards and those prevailing in developing countries, but they are also subject to frequent (usually upward) revisions.

China is a large agricultural producer and exporter. As China's agricultural trade continues to increase, the country has experienced more challenges in meeting the SPS standards set by its trade partners. While some of the SPS standards are legitimate and necessary for protecting human, animal, and plant health, others are considered to be disguised forms of protection. Concern in China has grown that technical regulations such as the SPS standards are increasingly being used to discriminate against some of its exports. The European Union (EU), Japan, and the United States are the three markets in which China has encountered the most SPS barriers.

Because of the difficulty of challenging foreign SPS barriers, it is considered more practical to meet these high foreign standards. To this end, China has enacted many laws and regulations on food and agricultural production. Despite efforts, many problems exist in China's food safety regulatory system. First, domestic food regulations are usually not consistent with or are less restrictive than international standards. Second, there is little coordination among the various government ministries and agencies when they establish agricultural standards and food safety controls. Third, the lack of technical, institutional, and managerial capacity to control and ensure compliance makes the regulations and standards ineffective.

Capacity building in both the public and the private sector will help China move toward better food safety status and create more trade opportunities. The private sector, including the farm sector, has the main responsibility for producing and selling safe food. Attracting more foreign direct investment (FDI) and establishing Hazard Analysis and Critical Control Point (HACCP) systems and coordinated supply chain management in agriculture should be the main focus. The government, however, sets the framework within which the private sector operates, and the role of the public sector in organizing public services and promoting food safety should be emphasized.

Your assignment is to develop strategies that China can use to enhance its capacity to meet food export quality standards, taking into account the financial, institutional, and technical constraints it is facing.

Background

Food safety risks refer to the potential hazards associated with food that can cause ill health in humans, animals, and plants.[1] In both developing and developed countries, foodborne illnesses and dissemination of pests or invasive species have become an increasingly important public health and environmental issue, imposing a significant burden on communities and their economic systems. In recent years, in response to an increasing number of food safety problems and rising consumer concerns about foodborne hazards, governments all

[1] Hazards include those associated with microbial pathogens, pesticides and veterinary pharmaceuticals, environmental contaminants (for example, heavy metals), naturally occurring toxins (for example, mycotoxins), and the spread of plant pests and animal diseases.

over the world are intensifying their efforts to regulate their food sectors and strengthening their domestic sanitary and phytosanitary (SPS) standards.

Rising SPS standards have created numerous obstacles to the international exchange of agricultural commodities. The issue is of particular importance for developing countries with abundant agricultural resources as they seek to expand their exports of labor-intensive and high-value-added agricultural products to the more lucrative developed-country markets. Agricultural exporters in developing countries are often required to meet stringent developed-country SPS standards by demonstrating that their products do not endanger native species or human health in the importing country. Not only are these standards much higher than international standards as well as those prevailing in developing countries, but they are also subject to frequent (usually upward) revision. Higher SPS standards significantly increase the exporting costs, and failure to meet the standards is usually disastrous for exporters in developing countries.

Policymakers acknowledge that the increasing SPS standards in the developed world are due in part to growing consumer demand for food safety as well as advances in scientific knowledge about food-borne hazards. They also recognize, however, that the disingenuous use of the standards can provide a nontransparent means of impeding trade for protectionist purposes. Such protectionist efforts have become more apparent as traditional trade barriers like tariffs and quantitative restrictions on trade in agricultural and food products continue to decline. The proliferation of SPS-related trade disputes in the 1980s and 1990s led to the creation of a set of new disciplines on the use of SPS measures in the Uruguay Round negations—that is, the SPS Agreement in 1995. Since 1995 the role of the SPS Agreement in averting trade-distorting SPS standards has increasingly been recognized.

In principle, the SPS Agreement and the associated World Trade Organization (WTO) dispute settlement mechanism can ensure that SPS standards are not abused or misused for protectionist aims. But in practice developing countries are usually placed at a disadvantage when it comes to making use of these procedures. They are especially hampered by the lack of resources for meeting these standards and constrained by their limited institutional and political power for challenging unfair treatment (Hoekman and Mavroidis 2000; Busch and Reinhardt 2003).[2] As a result, issues related to the impact of SPS standards on developing-country agricultural trade, as well as the role of the SPS Agreement in addressing SPS-related trade disputes, remain at the forefront of the ongoing global trade policy debate.

There is a voluminous literature on the legal and institutional aspects of SPS issues. Few attempts have been made, however, to examine the problems faced by governments and exporting firms in developing countries in meeting these challenges. This information gap makes it difficult for developing countries to address their own supply-side problems. It also makes it difficult to conduct the current policy dialogue between developing and developed countries on this important issue in an informed and cooperative manner.

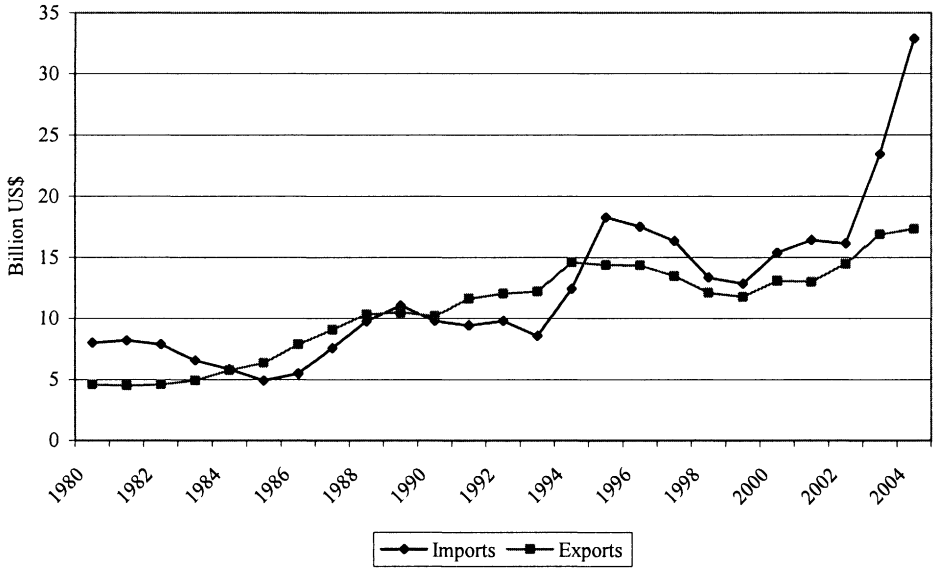
The purpose of this case study is to fill this knowledge gap. Drawing on the experience of China, the largest developing-country exporter of several agricultural commodities, this study aims to contribute to the understanding of the impact of international food safety regulations on agricultural trade, particularly on high-value-added products; to identify the policy, institutional, and technical problems faced by producers and exporters in meeting these requirements; and to identify appropriate policy responses to address these problems.

China's Agricultural Trade Patterns

Broad economic reforms initiated in 1978 brought rapid economic growth to China, and the country witnessed major changes in policies, which gradually shifted from central planning to more reliance on market mechanisms. During this period, China's agricultural sector has grown strongly. China alone accounts for one-fifth of world agricultural production. It became the 143rd member of the WTO on December 11, 2001, and the value of its agricultural trade continues to increase. In 2004 the total value

[2] An article in the SPS Agreement specifically promotes the provision of technical assistance to developing countries (Article 9). A related provision is the special and differential treatment, which stipulates that in applying SPS measures, the special needs of developing countries should be accounted for and a phase-in period for compliance with the SPS Agreement may be granted (Article 10). According to the literature, whether these provisions actually benefit developing countries is arguable (see Hoekman et al. 2004).

Figure 1: Chinese Agricultural Imports and Exports, 1980–2004



Source: National Bureau of Statistics, *China statistical yearbook*, various years.

of Chinese agricultural trade reached US$50.2 billion (imports plus exports), an increase of US$20.8 billion from 2001 (Figure 1). Agricultural exports and imports were US$17.3 billion and US$32.9 billion, respectively, in 2004, resulting in a record high agricultural trade deficit of US$15.6 billion. The rise of the agricultural trade deficit in recent years is due primarily to the dramatic increase in domestic demand for grain, cotton, and sugar.

Adjustments in China's trade policy, including tariff reduction policies, have significantly changed China's agricultural export and import structure. Agricultural trade has moved in a direction that is more consistent with China's comparative advantage (Hayes and Fuller 1999). For example, the proportion of grain exports fell to 20 percent of total agricultural exports in the 1990s, from more than 40 percent in the 1980s (Huang and Rozelle 2002). Horticultural, animal, and aquatic products accounted for more than 80 percent of agricultural exports in the late 1990s. By re-grouping trade data according to factor intensity in production, Huang and Rozelle conclude that China's net exports of land-intensive bulk commodities, such as grains, oilseeds, and sugar crops, have fallen, while exports of high-value and more labor-intensive commodities have risen. Similar trade patterns were observed in an earlier study by Carter and Li (1999).

The Impact of SPS Barriers

Before 2001, Chinese farmers and exporters had generally anticipated that China's WTO accession would have a large, positive impact on agricultural production and exports, especially for labor-intensive agricultural products. These expectations have largely not been borne out during the post-WTO years. With a few exceptions, most agricultural products in which China maintains a comparative advantage have not performed strongly in export markets. In fact, many of them have suffered significant losses. The products hardest hit are usually those subject to stringent foreign SPS standards.

As China's agricultural trade continues to increase, the country has experienced more challenges in meeting the SPS standards set by its trade partners. Concern has grown that technical regulations such as the SPS standards are being used to discriminate against some of its exports. But neither the scope of this problem nor the economic consequences have been fully identified. Some reports suggest that such barriers pose a very high cost in terms of lost export sales. For example, one Ministry of

Commerce report concludes that almost 90 percent of Chinese agricultural exports faced overseas technical barriers that resulted in US$9 billion of lost export sales (Zhu 2003). According to an official government newspaper, about US$7.4 billion of exports from China were lost annually owing to increasing technical barriers (*People's Daily* 2002).

Despite these estimates of large aggregate effects of technical barriers, China has pursued only a few cases of technical barrier disputes through the informal or formal dispute settlement processes established by the WTO. Through 2004, China had raised nine informal challenges within the WTO SPS Committee to regulations affecting its exports: three concerning the EU (over maximum residue limits and regulations on aflatoxins and ocratoxin A in foods for infants and young children), three concerning Japan (over the amendment of a food sanitation law and standards for food additives), one concerning the Philippines (over fruit regulations), and two concerning the United States (over rules on materials derived from cattle and restrictions on potted plants) (Box 1).

Box 1: SPS Concerns Raised By China

Food Safety

- European Communities—Notification G/SPS/N/EEC/236 and 237 on maximum residue levels for pesticides on food
- European Communities—Notification G/SPS/N/EEC/223/Add.1 on EC regulation on aflatoxins and Ocratoxin A in foods for infants and young children
- European Communities—Notification G/SPS/N/EEC/196 and Add.1 on maximum residue levels in pesticides
- Japan—amendment of the food sanitation law
- Japan—Notification G/SPS/N/JPN/104 on the revision of standards and specifications for food and additives
- Japan—Notification G/SPS/N/121 on standards and specifications for food additives (boscalid)

Animal Health and Zoonoses

- United States—Notification G/SPS/N/USA/933 and G/SPS/N/USA/934 on U.S. rule on materials derived from cattle and record keeping requirements

Plant Health Concerns

- United States—Restrictions on imports of Chinese potted plants in growing medium
- Philippines—Notification on Chinese fruit

Source: WTO 2005.

In addition to the informal notifications China has made to the WTO (none of which has advanced to the formal dispute settlement process), disputes in other venues concern pesticide residue limits and inspection requirements viewed as excessive for Chinese vegetable exports to Japan, restrictions on poultry meat and eels by Japan, EU restrictions on products of animal origin, poultry products, peanuts, shrimp, tea, and honey, and restrictions by the United States on longams, lychees, apples, and pears (Cheng 2005).

Import Refusals

China's recent experiences with SPS barriers have been mainly with the EU, Japan, and the United States.[3] Table 1 presents a summary of import refusals for Chinese food and agricultural products during 2004 and 2005. Overall, the total number of import refusals by these three major markets remained stable between 2004 and 2005. There was an increase in refusals by the United States (3.7 percent) and the EU (20.5 percent), but the numbers were nearly offset by the decrease by Japan (–20.1 percent). Among the three markets, the United States had by far the most import refusals, followed by Japan and the EU. When, however, the number of refusals is compared with the respective export value of agricultural products, a slightly different result is obtained. Although the United States still maintains the highest refusal rate, this rate is lower for Japan than for the EU because the value of agricultural exports to Japan is more than double that to the EU. In recent years Japan has been China's largest agricultural trading partner, importing approximately US$8 billion from China in 2005.

China's agricultural and food exports suffering from foreign SPS barriers cover a wide range of products, including processed food products, agricultural products, pharmaceutical products, livestock products, fishery products, and forestry products.[4] Table 2 shows the number of refusals for each category of products in the EU, Japan, and the United States in 2005. It can be seen that import refusals are concentrated in three product categories: processed food, agricultural products, and pharmaceutical products. Together they account for 90.3 percent of all import refusals in the three regions in 2005. Import refusals in pharmaceutical products are significant for the United States, totaling 312 cases in 2005, but not for the EU and Japan—only 3 cases were reported in Japan. For these two countries/regions, exports of livestock products seem to be more problematic than pharmaceutical products. For all three regions, import refusals occur less frequently in fishery and forestry products.

Two considerations are important in interpreting these refusal data. First, the products reported as "refusals" may subsequently gain access to the export market. For example, under the current U.S. Food and Drug Administration (FDA) detention system, a product placed on automatic detention may resume normal entry when the shipper or importer proves that the product meets FDA standards. "Refusal" is thus not a final rejection, since there is the possibility that some products could later be released with proper documentation and re-examination. No data on such releases are obtainable, however. If the product is finally refused, the importer is required to either re-export or destroy the article.

A second important consideration regarding the import refusal data is that they are count data and do not reflect the dollar value of Chinese food and agricultural products refused entry to the foreign markets. The value of refused products relative to the value of imports is the most direct measure of the challenges encountered at border inspection. Unfortunately, this measure cannot be calculated owing to the lack of value data for refused shipments. A rough measure of relative refusal rates can be made by comparing the number of refusals to the value of agricultural and food products imported in a certain year, as discussed earlier.

Stakeholders

In China, exports of agricultural and food products, especially those in which China has a comparative advantage, offer opportunities to producers, processors, and traders. These exports are particularly important for poor families with abundant labor and limited land, since producing labor-intensive export-oriented commodities allows for far higher production value, income, and

[3] In 2005 SPS-related import refusals of China's agricultural and food products totaled 1,985, of which 1,634, or 82.3 percent, originate from the EU, Japan, and the United States.

[4] In this section, "food and agricultural products" also cover pharmaceutical products.

Table 1: Import Refusals by the EU, Japan, and the United States, 2004 and 2005

Importing country	Number of refusals			Total agricultural exports (billion US$)		
	2004	2005	Change (%)	2004	2005	Change (%)
United States	1,138	1,180	3.7	2.3	2.8	22.5
EU	146	176	20.5	2.6	3.5	33.5
Japan	348	278	–20.1	7.4	7.9	7.2
Total	1,632	1,634	0.1	12.3	14.2	15.6

Source: GAQSIQ 2006.

Table 2: Import Refusals by Product Category in 2005

Product category	United States	EU	Japan	Total
Processed food products	448	49	195	692
Agricultural products	328	96	44	468
Pharmaceutical products	312	0	3	315
Livestock products	18	20	22	60
Fishery products	15	1	12	28
Forestry products	2	3	0	5
Others	57	7	2	66
Total	1,180	176	278	1,634

Source: GAQSIQ 2006.

employment per hectare than land-intensive commodities such as grain crops and soybeans.

Fruit and vegetable production can be used as an example (World Bank 2005): in 2000 the number of days of labor input per *mu* (0.067 hectare) was 12 for maize, 10 for wheat, and 15 for rice but increased to 44 for apples, 81 for tomatoes, and 74 for cucumbers. Net value added in renminbi (RMB) per *mu* was 185 for maize, 115 for wheat, 279 for rice, 985 for apples, 1,717 for tomatoes, and 1,172 for cucumbers. Exports of higher-quality fruits and vegetable for demanding foreign buyers may require additional labor input and generate more value added both on the farm and during processing and packing at the postharvest stage.

Foreign SPS barriers have a direct impact on the welfare of smallholder farmers producing high-value-added, labor-intensive agricultural commodities. The magnitude of such impacts is, however, hard to measure at the micro level. Available data at more aggregate levels indicate that these barriers can lead to substantial losses in terms of lost export sales. Three broad categories of products—fruits and vegetables, products of animal origin, and honey and tea—have been affected the most. Correspondingly, major domestic stakeholders are farmers and exporters of these products and foreign stakeholders are the EU, Japan, and the United States.[5]

[5] Within these countries, producers and consumers are both stakeholders who may have potentially different interests. When the SPS barriers are implemented to protect domestic producers, consumers lose as result of trade limitation and price increase. When the SPS barriers are based on science and serve legitimate purposes, however, consumers may gain from enhanced food safety (even though the price they pay still increases). In either case, producers in importing countries are beneficiaries of the SPS barriers.

Fruits and Vegetables

China's fruit and vegetable sector has become one of the fastest-growing sectors of agricultural production in the past decade. Fruit and vegetable production reached 145 million metric tons and 540 million metric tons, respectively, in 2003. Although this volume of output is large, only a small portion (less than 1 percent) is exported. Japan is the dominant export destination for China's vegetables and fruits. Vegetable exports to Japan accounted for 25 percent of the volume and 40 percent of the value of total vegetable and fruit exports, and fruit exports to Japan accounted for 11 percent of the volume and 22 percent of the value. Besides Japan, other major markets for Chinese fruit and vegetable exports are the EU, Hong Kong, Malaysia, South Korea, and the United States.

China's continued role as a major supplier of fruits and vegetables to Japan depends on how Chinese food producers and processors respond to the increased demand for food safety by Japanese consumers. A case in point is China's spinach exports to Japan. Before 2002, 99 percent of Japan's annual spinach imports came from China. In July 2002, owing to an excess of residues of agricultural chemicals detected in imported Chinese vegetables, Japan's Ministry of Health, Labor, and Welfare (MHLW) reinforced safety inspections of Chinese vegetables at the border and promulgated an import ban on frozen spinach from China. This prohibition lasted about eight months till February 2003. But in May 2003 Japan again prohibited importers from purchasing Chinese frozen spinach after detecting higher than permitted levels of pesticide residue. Export of spinach did not resume until July 2004, when the MHLW lifted the ban and allowed frozen spinach to be imported from 27 authorized Chinese companies.

Although the ban on spinach has been lifted, it was a major disruption in trade from China to Japan, not only for spinach, but also for vegetables and fruits in general. Many Japanese and Chinese companies incurred heavy financial losses on stocks of product and on current contracts. The ban resulted in increased commercial risks for importers and food retailers. Moreover, it had a lasting negative impact on Japanese consumers' confidence in the safety and quality of Chinese fruits and vegetables and negatively affected their buying attitudes. Consequently, prices of imported Chinese fruit and vegetable products in the Japanese market declined, and Japan's share in total Chinese exports dropped.

The problems with frozen spinach are not the only ones for Chinese fruit and vegetable exports to Japan. Problems occur occasionally with other products, including fresh cabbage, fresh peas, fresh celery, and peanuts. Most cases of noncompliance with food safety in the Japanese fruit and vegetable market are related to pesticide residues. Phytosanitary constraints, however, are also important. Currently, Japan's Plant Protection Law stipulates 16 types of plant pests and diseases in foreign countries that are major quarantine concerns, and 5 types are relevant for trade with China: oriental fruit fly (*Bactrocera dorsalis* species complex); melon fly (*Dacus cucurbitae*); codling moth (*Cydia pomonella*); sweet potato weevil; and rice stem nematode.

Products of Animal Origin

China is also a significant player in world trade of meat and fishery products. Major export markets for these products include the EU, Hong Kong, Japan, South Korea, Russia, and some countries in the Middle East (such as Saudi Arabia). In November 2001, 300 metric tons of shrimp shipped from China to the EU were discovered to contain 0.2 parts per billion (ppb) of chloramphenicol. As a result, the EU suspended imports of Chinese products of animal origin intended for human consumption or for use in animal feeds. Affected products included rabbit meat, poultry meat, and crustaceans such as shrimp and prawns. Exports of aquatic products to the EU slumped more than 40 percent from 193,000 metric tons in 2001 to 110,000 metric tons in 2002. Meat exports to the EU dropped to 5,000 metric tons in 2002—only 36 percent of the 2001 level. Following the EU ban, other countries, including Hungary, Japan, Russia, and the United Arab Emirates, implemented stricter inspections of meat and fishery products from China.

In April 2004 the European Commission issued Commission Decision 2004/432/EC listing the names of countries approved by the Commission with regard to the submission of monitoring plans and the categories of products approved. China is on the list of countries with approved products covering only pigs and sheep. Since then the EU has approved two modifications to the list of countries and products. In the list revised in May 2005, China's residue-monitoring plans for pig and sheep products, poultry, fishery products, rabbit meat, and honey were approved.

On the basis of Commission Decision 2005/573/EC published in July 2005, the EU completely lifted the import ban on fishery products (except aquaculture fishery products and shrimp), gelatin, and pet food from China. For some other products, including aquaculture fishery products, shrimp (including peeled shrimp and crayfish), casings, rabbit meat, honey, and royal jelly, China must meet not only the general regulations for EU imports from third countries, but also new regulations specifically for China. In other words, the EU member states can authorize imports of products only if they are accompanied by a declaration from the relevant Chinese authorities stating that before being dispatched, each consignment has been subjected to a chemical test to ensure that the products do not present a danger to human health.

Honey and Tea

Honey and tea are two traditional Chinese staple export products. Since 2002, however, exports of honey and tea from China to the EU, Japan, and the United States have been drastically reduced owing to the new food safety standards in these markets. In February 2002 the EU banned imports of honey from China after finding chloramphenicol (CAP) at levels higher than 0.1 part per billion (ppb). Following the EU ban, Japan and the United States increased their controls and tests of honey from China. For example, in May 2002 the U.S. FDA lowered the maximum level of chloramphenicol residue in Chinese honey to 0.3 ppb and claimed that the standard may be increased to 0.1 ppb. Following the adjustment, China's honey exports to the United States dropped from 15,000 metric tons in 2001 to less than 8,000 metric tons in 2002. Honey exports to Japan also decreased in 2002, though to a lesser extent.

Other countries have also banned or set higher standards for China's honey exports. For example, Saudi Arabia, which had imported about 200 metric tons of honey from China annually, imposed a complete ban in 2002. On June 2, 2002, Mexico ordered 356 metric tons of contaminated Chinese honey to be sent back or destroyed. Canada began stricter inspection for antibiotics in Chinese honey starting February 20, 2002, and required testing for the residue of phenol and 19 kinds of sulphanilamide (SN). Exports of honey to Canada decreased from almost 5,000 metric tons in 2001 to a little more than 1,000 metric tons in 2002.

A similar situation occurred for China's tea exports. The EU and Japan, the two largest importers of China's tea, have increased the standards for testing pesticide residues in tea in recent years. From 1999 to 2002, the number of pesticide residues tested for by the EU increased from 7 to 191. The criteria in terms of maximum residue limits (MRLs) are also becoming much stricter. For example, the MRL for fenvalerate in EU went from 10 ppm in the 1990s to 0.01 ppm in 2002. After the withdrawal of authorizations for plant protection products containing endosulfan, the EU reduced the MRL for endosulfan in tea from 30 ppm to 0.01 ppm, making the new standard 3,000 times stricter than the original one and much stricter than the prevailing international standard (30 ppm, according to the Codex Alimentarius).

Japan has also strengthened its inspection of tea imports, especially those from China. With the amendment of its food hygiene law on November 8, 2002, Japan had MRLs for 108 pesticide residues for China's tea exports. With the introduction in Japan of the Positive List System of Agricultural Chemical Residues in Foods on May 29, 2006, 448 pesticides are on the list for screening and 276 residue limits are listed for tea. Following the implementation of stricter inspection standards, China's tea exports to the EU and Japan decreased by more than 30 percent and 20 percent, respectively, in 2002 compared with 2001.

Policy Issues

Problems with the Regulatory System

The most salient feature of China's food safety regulatory system is the fragmentation of regulatory authority among different government agencies. Currently the Ministry of Health (MOH), the Ministry of Agriculture (MOA), the General Administration of Quality Supervision, Inspection, and Quarantine (GAQSIQ), the State Administration for Industry and Commerce (SAIC), the Ministry of Commerce (MOC), and the State Food and Drug Administration (SFDA) are actively involved in regulating food safety. This fragmentation of the food safety regulatory system presents a challenge for regulatory implementation. In some cases there may be excessive enforcement; in others, shirking of responsibility and shifting of blame (Tam and Yang 2005).

China has enacted many laws and regulations on food and agricultural production, and many of them are outdated, repetitive, and inconsistent with or less restrictive than international standards. For example, with respect to restrictions on pesticide residues, the Codex Alimentarius has set up more than 2,500 maximum residue levels, the EU has more than 22,000, Japan has more than 10,000, and the United States has more than 8,600, whereas China has only 484, and fewer than 20 percent of these conform to Codex levels (Dong and Jensen 2004). Moreover, the establishment of agricultural standards and food safety controls in China involves multiple government ministries and agencies, with little coordination from the central government down to the county level. As a result, each level of government has developed its own standards creating a dispersed regulatory structure that neither facilitates coordination nor supports effective implementation of food safety regulations.

The lack of effective regulation of quality standards and a supervision system to control agricultural production and processing has led to substantial noncompliance with regulations. Problems with farmers misusing or abusing chemical fertilizers, pesticides, and antibiotics are particularly acute. According to inspection reports of produce sampled by the GAQSIQ in 2001, 86 of 181 vegetable samples contained excessive pesticide residues. Among them, three prohibited hazardous pesticides—rogor, carbofuran, and isocarbophos—were found in 25, 18, and 16 samples, respectively (Dong and Jensen 2004). Noncompliance also occurs at the processing and marketing stage. Some "questionable" food-processing procedures currently reported in China include sleeve-fish preserved in formalin, bamboo shoots kept fresh with industrial sulfur, cuttlefish dyed with ink, and moldy oranges covered with a coating of paraffin. In 2005 the GAQSIQ tested 2,000 processed food samples and found one-fifth of them below state-imposed quality standards (*China Daily* 2005a).

Lack of Knowledge

A lack of basic knowledge on food safety contributes to China's current SPS situation. Apart from moral reasons, farmers and food industry workers who are not aware of the importance of food safety may not discipline themselves to meet the standards. Consumers may not demand or are unwilling to pay more for safety features incorporated in food because they do not know the importance of safe food for human health. Agricultural producers and processors who are not aware of the changes in food safety requirements taking place in domestic and foreign markets may make the wrong decisions for improving their business.

In recent years, following a series of food scandals, there has been an increase in food safety awareness among China's urban residents. But for most Chinese small-scale farmers, food safety education and technical training is still lacking. Some farmers are not able to follow instructions for pesticide use, whereas others do not have enough knowledge or expertise to identify the risks of pests or diseases. In both cases, farmers tend to misuse or overuse pesticides. Farmers often do not know when their products are safe to be harvested after the pesticides are used, and there is no testing available at the farm level, especially for small farmers.

Small Production Scale

The small scale of agricultural and food production in China, as well as the fact that producers are relatively scattered across producing areas, contributes to the abuse of agricultural chemicals and other hazardous materials. In 2004 the GAQSIQ surveyed producers (including farmers and processors) of rice, wheat flour, cooking oil, soy sauce, and vinegar products. Of these, 79 percent were family businesses with fewer than 10 workers each. Nearly 16 percent of them were producing without a license, and quality control and safety inspections were nonexistent in 64 percent of them (*China Daily* 2005a).

Food safety control in a country with a farm population of more than 600 million and countless household farming operations is a difficult, if not impossible, task given China's current financial and institutional capacity. The fragmented food supply chain, from planting, raising, harvesting, transportation, storage, processing, and, eventually, to the delivery of finished products to markets, makes it even more difficult to achieve traceable product flow and meet requirements for quality assurance. In addition, small-scale farmers themselves have little or no motivation to comply with SPS regulations since compliance leads to higher production costs while noncompliance does not incur any penalties.

Environmental Problems

Increasing industrial pollution in China is also causing SPS problems. Polluted water and soil

directly affect agricultural production. This pollution could be the reason that some testing results show noncompliance with lead (Pb) limits. For example, samples drawn from 220 million kilograms of crop production grown on 300,000 hectares of land in 2000 show that 10 percent of crop production contained excessive levels of heavy metals (Dong and Jensen 2004). According to a recent estimate by the State Environmental Protection Administration (SEPA), 12 million tons of grain nationwide are polluted with heavy metals that have found their way into soil each year. Direct economic losses exceed 20 billion yuan (about US$2.5 billion) (Xinhua News Agency 2006).

Policy Options

The Public Sector

Organization and coordination. Since China has a multiagency system for food safety control, there is much overlap in the functioning of various agencies and a lack of coordination between them (Tam and Yang 2005). There are also conflicts between governments at various administrative levels as a result of their potentially different policy goals. To improve the current institutional framework for China's food safety, the government should strengthen organization and coordination so that responsibilities for monitoring and controlling food safety are clearly specified and distributed among different ministries and agencies at different levels. For example, the Ministry of Agriculture should be responsible for enforcing food safety regulations during agricultural production and promoting good agricultural practices (GAPs); the General Administration of Quality Supervision, Inspection and Quarantine should coordinate and monitor activities in domestic food markets and for imports and exports; the Ministry of Health should be responsible for food safety at the consumption stage, and the State Food and Drug Administration should coordinate the relevant bureaucracies to draft laws and administrative regulations concerning food safety.

Food safety promotion and information sharing. Improving people's awareness about food safety is an important strategy for the government. Over the past few years, food safety awareness in China has increased, mostly owing to food scandals and mainly among urban consumers.[6] To date, no mass media campaigns related to food safety have taken place in China, and information dissemination on food safety is limited in scale and usually disorganized. It is very important that the government can play a central role in promoting food safety through activities such as general education about hygiene in the workplace and on the farm, education for farmers about the safe use of pesticides, integrated pest management (IPM), and GAPs, and news paper, TV or web-based information sharing about food safety for the general public. Promotion of food safety in agri-food business should be accompanied by the establishment of alert systems and databases about possible health hazards. This can help industry improve product quality and prevent and control food safety hazards. In the trade arena, a food safety notification and inquiry system maintained by the government (such as the GAQSIQ's WTO TBT/SPS enquiry point) can better assist importers and exporters in obtaining up-to-date information on domestic and foreign regulatory changes.

Food safety monitoring. Monitoring is critical for creating food safety related data, setting relevant policies and targets, and prioritizing measures for supervision and enforcement. To enhance food safety monitoring and testing capacity, the Chinese authorities have established many laboratories at different levels of government. While good infrastructure building is important, a narrow emphasis on investment is not enough. The critical issue now in China is how to use these available resources efficiently and effectively. So far a lack of qualified technicians and relevant expertise presents a bigger constraint than a lack of advanced testing equipment and facilities. Therefore, China needs to invest more on personnel training on new analysis technology, methods, and operation of monitoring and testing devices.

Good food safety monitoring also requires an efficient data gathering system. Without such a

[6] A national survey recently revealed that food safety has become the primary concern for China's urban residents. The survey covered 1,058 people from China's 10 major provinces and municipalities between June 16 and 26, 2005. According to the survey, public awareness of food safety issues increased after several serious food scandals, including the use of the cancer-causing Sudan I red dye by Kentucky Fried Chicken (KFC) and a subsidiary of U.S.-based Heinz, the addition of excessive iodine to infant formula by Nestlé, and the reprocessing of out-of-date milk by Bright Dairy (*China Daily* 2005b).

system, consistent and reliable data will be unavailable and evidence-based interventions will be impossible. A monitoring and surveillance system employing sentinel sites and regional and national laboratory networks as well as food safety agencies at different administrative levels would serve the purpose. Since many entities are involved in this system, it is important to ensure that the whole system is transparent, its functionings are science-based, the subsystems are comparable, and, hence, the monitoring results are credible. Currently, China does not have an efficient monitoring system, which has led to a paucity of scientific data related to food safety. By reevaluating the existing system in the areas such as the sampling frames, testing methods, data analyses, lab capacities, and management and personnel skills and by better integrating the efforts of different departments and central and local labs, the government can develop an improved monitoring network that benefit both domestic and export markets.

The Private Sector

Foreign direct investment and "dragon-head" enterprises. To develop the infrastructure required to support better food safety control, China needs to find a way to increase investment in agriculture. Given limited domestic funding resources, the government should continue to attract foreign investments, and in particular, foreign direct investments (FDI). It is believed that the FDI, as compared to other types of investments, can not only introduce stable capital inflows but also bring advanced technology and management and marketing skills that are essential for improving product quality, increasing exports, and assisting in the transition from traditional to modern agricultural operations. In addition to encouraging FDI, the government needs to support the development of large-scale rural firms, or "dragon-head" enterprises, because they play an important role in the industrialization of the agricultural system and the linkage between farmers and markets.[7]

Both the FDI and dragon-head enterprises can help millions of small-scale farmers who have low management skills and poor production techniques to comply with stricter food safety requirements and remain competitive in the international markets.[8] Through contracts or other arrangements, small-scale farmers are linked to larger-scale production and processing which allow them to gain economies of scale, acquire modern production and management skills and adapt to more standardized production procedures. This means farmers can now meet food safety standards more easily and with lower costs. Currently the involvement of FDI and dragon-head enterprises is disproportionately concentrated in China's coastal region while the share of agriculture in total FDI is relatively low (about 5 percent). Additional polices are needed to direct more FDI to the agricultural sector and to nurture more dragon-head enterprises in the inland regions.

HACCP, GAP, and GMP. Agro-food businesses in China should consider implementing standardized food safety control procedures as another potentially useful approach to reducing SPS problems. The Hazard Analysis and Critical Control Point (HACCP) system is one of those international recognized procedures.[9] The HACCP system requires identification of critical control points and development of procedures for monitoring controls and addressing any failures in control. Often, firms are given some flexibility in determining control points and critical limits, so implementation of HACCP is adaptable to many different contexts. The imposition of regulations mandating the HACCP system reflects a growing recognition that it is important to prevent and control food safety hazards before they reach the consumer.

Given the fact that not all food producers and processors are required to adopt HACCP, the responsibility for improving SPS conditions will also come through self- or market-oriented disciplines such as good agricultural practices (GAPs) and

[7] Enterprises are registered and attached to administrative levels based on figures including turnover, profits, market share, taxes paid, and growth rates. Dragon-head enterprises are specific to agriculture, as they must have contact with or lead along a large number of farmers and contribute to agro-industrialization and vertical integration. Dragon-head enterprises are commonly eligible for preferential tax treatment, preferential access to loans, and invitations to join official meetings and delegations.

[8] There are concerns about whether FDI and dragon-head enterprises can actually benefit small farmers. Some argue that farmers get little assistance in terms of inputs, technology, and marketing (Huang et al. 2006).

[9] China first adopted the HACCP system in the production of aquatic products and later introduced it to other foods including canned food, meat and meat products, frozen vegetables, fruit/vegetable juice, and frozen convenience food containing meat or aquatic products. The use of the HACCP system is primarily export oriented, although in recent years there an increasing demand for this certification for domestically consumed products.

good manufacturing practices (GMPs). GAPs and GMPs principles provide food growers and manufacturers with guidelines to reduce the potential contamination of their products. Guidelines cover growing, harvesting, sorting, packing, and storage operations. National-level guidelines on GAPs and GMPs enhance the consistency and scientific basis of food safety programs developed by public and private institutions. Producers' adoption of good practices such as GAPs and GMPs can be promoted by the government or motivated by the promise of earning more returns by selling products of higher quality and safety.

Supply chain management. Experience has shown that coordinated and integrated supply chains are crucial for participation in modern food markets since they provide an efficient and effective tool for food quality and safety control. But to date in China, coordinated supply chains handle a relatively small percentage of food.[10] In cases where coordinated supply chains are established, they are mostly within the export sector, which have received valuable support from foreign partners. To create an overall environment of enhanced food safety, it is important for the whole agriculture sector to adopt modern supply chain management and strengthen the participation of small-scale farmers.

Although private enterprises and their partners have primary responsibility for setting up and managing coordinated supply chains and safety management programs, proper government support is also important. To avoid creating unnecessary market distortions, the government's supporting role should focus on a good investment climate for coordinated supply chains, especially legal and regulatory issues, infrastructure, a skilled labor force, and relevant business services. Privately maintained supply chain schemes from the world's leading food importers as well as other well-established supply chain with independent accreditation and certification, such as under the British Retail Consortium (BRC) or Euro-Retailer Produce GAP (EUREPGAP), can help domestic firms meet high food safety standards with limited public sector intervention. It is therefore important for the government to enhance the formation and functioning of these types of coordinated supply chains.

[10] Although upstream segments of the supply chain have evolved dramatically in China in the past 20 years, agricultural marketing is still dominated by the sales of farmers to small wholesalers and small traders. There is little penetration of the new retailing institutions because of high transaction costs between modern retailers and small farmers, and buyers play little role in providing technology, inputs, technical advice, or credit (Huang et al. 2006).

Assignment

Your assignment is to develop strategies that China can use to enhance its capacity to meet food export quality standards, taking into account the financial, institutional, and technical constraints it is facing.

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Chapter Nineteen
Tariff Escalation in World Agricultural Trade (10-11)
by Fuzhi Cheng

Executive Summary

Tariff escalation, a common practice in international commodity trade, refers to a situation where tariffs are zero or low on primary products and increase, or escalate, as products undergo processing. It causes the price of value-added imports relative to raw products to increase, decreasing the demand for processed products in the importing country. Through tariff escalation, one country can effectively protect its domestic processing industries while limiting the scope of trade-related industrialization in foreign countries.

Tariff escalation significantly impedes market access for developing countries, particularly in agricultural trade. Higher tariffs for more-processed agricultural products have the potential to depress value-added activities and obstruct export diversification in agricultural exporting countries. In addition, tariff escalation is perceived as a source of environmental damage to exporting countries because excessive reliance on primary product exports can lead to depletion of natural resources and disturb the ecological balance.

Although the importance that developing countries attach to reducing tariff escalation is widely recognized, little progress has been made in this area. The structure of escalated tariffs in world trade is caused and maintained by the rent-seeking behavior of economic agents and the resulting political economy of trade policies in developed countries. Food-processing industries in developed countries are proponents and beneficiaries of escalated tariffs. As agricultural commodity chains, particularly those of high-value crops and processed products, become increasingly dominated by a few giant multinational enterprises, industry's incentives and ability to maintain tariff escalation grow stronger. Developing countries and consumers in developed countries are the losers from tariff escalation, but they lack the political power to change the existing regime.

Reducing tariff escalation is an important issue in the ongoing World Trade Organization (WTO) negotiations on agriculture. Recognizing that tariff escalation is widespread in the post–Uruguay Round period, many negotiating proposals have called for eliminating or reducing tariff escalation as an explicit goal within the market access pillar of the Doha Round negotiations. Studies have also shown that these proposals offer options conducive to further reduction in tariff escalation. A few technical problems may arise, however, and special consideration must be given to the least-developed countries (LDCs) to prevent erosion of their preferential margins.

The formation of a coalition of interests between the South and the North could make an agreement to further reduce tariff escalation more politically feasible. Furthermore, strategies aimed at reducing tariff escalation should be accompanied by other domestic and trade policies designed to enhance the internal capacity of developing countries. Sometimes these policies will involve financial and technical assistance from developed countries.

Your assignment is to recommend to the WTO a change in trade policy measures that would allow tariff escalation to be reduced and eventually eliminated.

Background

Tariff escalation refers to the situation where tariffs are zero or low on primary products and increase, or escalate, as products undergo processing.[1] A common practice in international commodity trade, tariff escalation causes the price of value-added imports relative to raw products to increase, decreasing the demand for processed products in the importing country.

[1] The opposite may occur when tariffs are higher on raw materials than on processed products, a situation known as tariff de-escalation.

Through tariff escalation, one country can effectively protect its domestic processing industries while limiting the scope of trade-related industrialization in foreign countries.

Tariff escalation significantly impedes market access for developing countries, particularly in agricultural trade. Fully processed, manufactured agricultural products are usually subject to much higher tariffs than unprocessed products in developed countries. For example, average tariffs on processed food are as much as 13 times higher than those on unprocessed products in Canada. In the European Union (EU), 30 percent of all peak tariffs protect the agricultural processing industry. These tariffs range from 12 to 100 percent, affecting sugar-based products, cereals, and canned fruits. The situation is similar in the United States, where the agricultural processing industry accounts for one-sixth of all peak tariffs. Forty percent of all Japanese peak tariffs protect the food industry and affect a wide range of products from cocoa powder and chocolate to canned meat and fruit juices.

The existence of tariff escalation prohibits processed agricultural products from entering developed-country markets, hindering expansion of agricultural processing industries and export-led development in developing countries.[2] In addition, tariff escalation is perceived as a source of damage to the environment and an obstacle to sustainability in developing countries (OECD 1996; Hecht 1997). Because of tariff escalation, developing countries are often trapped as raw material providers, with often harmful consequences for the environment. For example, excessive reliance on primary product exports is likely to cause depletion of natural resources and disturb the ecological balance of the country. In addition, the slower rate of income growth that results from deteriorating terms of trade for raw materials and overexploitation of resources leaves fewer resources available for efficient environmental management in exporting countries.

Although the importance that developing countries attach to reducing tariff escalation is widely recognized, little progress has been made in this area. The WTO Uruguay Round (UR) made some contributions toward resolving this issue, but the practice of tariff escalation persists and has become one of the most debated issues in the current multilateral trade negotiations. For instance, in the beginning of the Doha Round, 13 out of the 45 country negotiating proposals called for substantial reduction in tariff escalation, particularly in the developed-country markets. These proposals considered tariff escalation a key market access problem faced by commodity exporters and argued that it should be eliminated to help place agricultural products on the same footing as other products in the international trading system. The need to further reduce tariff escalation was again emphasized in the modalities of the July Package of 2004 (WT/L/579), the Hong Kong Declaration of December 2005 (WT/MIN(05)/DEC), and more recently Falconer's proposal (TN/AG/W/4).

Measuring Tariff Escalation

Tariff escalation can be measured either as "nominal tariff escalation" or as "effective rate of protection." Nominal tariff escalation (NTE) is measured as the tariff wedge (TW), which is the difference between the tariff imposed on the processed output commodity and the tariff imposed on the input commodity (all in ad valorem terms).[3] The effective rate of protection (ERP) measures the effects of tariff structure on the value added of the processed commodity. It is defined as the percentage increase in value added between trade with tariffs and free trade. Numerically, ERP is equal to the difference between value added expressed in domestic prices (that is, prices including tariffs) and that expressed in world market prices (that is, free trade prices), divided by the value added at world market prices.

Both the ERP and the TW may be positive, denoting the presence of tariff escalation; negative, denoting the presence of tariff de-escalation; or zero, denoting the neutrality of the tariff structure. Although the ERP is a reliable indicator of the extent of protection provided to downstream industries through tariff escalation, it is difficult to calculate because it requires not only data on tariffs, but also detailed and accurate data on prices, inputs, and technical coefficients—that is, data from input-output matrices that generally

[2] It should be noted that tariff escalation also exists in developing countries. To the extent that agricultural trade between developing countries is expanding, reduction of tariff escalation within developing countries has become an increasingly important issue.

[3] An ad valorem tariff is a fixed-percentage duty assessed on the value of imports.

are not available. To overcome the difficulties related to estimating the ERP, the TW approach can be used, but not without important limitations. First, nominal tariffs wedges do not fully represent the protection level created by the tariff structure. Second, since tariff wedges do not take into account the value added, they cannot be compared across commodities. Third, the concept of tariff wedges can hardly be applied to processing relationships with multiple inputs or multiple outputs. Therefore, whatever the method used in this exercise, the results should be interpreted with caution.

Tariff Escalation and World Agricultural Trade

Studies have shown that growth in global agricultural trade in recent decades has shifted more to processed products relative to raw materials (FAO 2004). Exports of processed agricultural commodities generate more income and employment opportunities through increased volume of trade, better prices, and more value-added activities related to the products and thus contribute significantly to economic growth in exporting countries. Tariff escalation and other trade barriers, however, often keep developing countries from benefiting from this trend and force them to continue to be providers of raw products. To give some indication of the extent of tariff escalation and how it has affected agricultural trade, Table 1 shows various processing stages for a number of commodity groups in different countries and regions and gives the corresponding tariffs and trade values.[4]

A number of important features emerge from Table 1. First, tariffs are often higher on fully processed products than on semiprocessed or primary products in the selected countries, especially the Quad countries (Canada, the EU, Japan, and the United States). Tariff escalation is most pronounced for cocoa and coffee, two crops of special export interest to many poor developing countries. Correspondingly, the export shares of developing countries for the two products decline with processing stages. For example, developing countries dominate the world market for cocoa beans and green coffee, but their exports of the finished products—chocolate and roasted coffee—account for only 8 and 9 percent of their respective export market values.

Second, tariffs in some processing chains do not increase and may even decline with additional processing. This pattern of tariff de-escalation may be tied to the level of support provided by farm programs, which, to be effective, might require high border protection on primary products, such as sugar and tobacco. Interestingly, however, tariff de-escalation in these commodities is not necessarily associated with increased market shares of more-processed commodities from developing countries. For example, the market shares of final products of sugar and tobacco from developing countries dropped even though tariffs for sugar confectionery and cigars are less than those for raw sugar and tobacco leaves. Thus other factors beyond tariffs significantly limit the ability of developing countries to expand exports of processed products. These factors include high transport costs and the ability of firms, especially the multinationals, to exercise monopoly power (Yeats 1984).

Reducing tariff escalation may benefit developing countries by permitting increased market access for some of their processed agricultural products. Several studies have shown this effect. For example, Elamin and Khaira (2004) use the Agricultural Trade Policy Simulation Model (ATPSM) of the United Nations Conference on Trade and Development (UNCTAD)–Food and Agriculture Organization of the United Nations (FAO) to simulate the effects of changes in tariff escalation, under the Harbinson proposal, on selected processed products. Their results are shown in Table 2. Elamin and Khaira's study included only a few processed products, namely roasted coffee, cocoa butter, cocoa powder, chocolate, and vegetable oils. Apart from oilseeds, existing tariffs on primary and processed forms of these products show a clear pattern of escalation. The simulation results based on this limited set of products show that reduced tariff wedges (including negative wedges) under Harbinson lead to slightly increased export values for all countries. Gains in exports are relatively higher for developing countries and LDCs than for developed countries (Table 2). Because the Harbinson proposal offers only limited tariff reduction, it is expected that trade in processed products would increase even more if tariff escalation were further reduced.

[4] For simplicity, Table 1 uses the WTO bound tariff rates. Alternatively, applied tariff rates can be used. Elamin and Khaira (2004) have shown that the degree of tariff escalation is lower in the case of applied than bound tariffs, particularly when tariff preferences are taken into account.

Policy Issues

Primary or Value-added Production?

Over the past 20 years, world trade in processed agricultural products has increased significantly from an annual average of US$150 billion during 1981–1990 to more than US$300 billion during 1991–2000. Although some developing countries have benefited from this trend, developed countries have captured the bulk of the rapidly growing trade in this sector. Between 1981 and 2000, developed countries accounted for more than 70 percent of the world's processed agricultural product exports (Table 3). The share of developing countries fell from 27 percent in 1981–1990 to 25 percent in 1991–2000. For LDCs as a group, the share in processed agricultural exports fell from a negligible 0.7 percent to 0.3 percent over the same period. The significance of developing countries as primary producers has also decreased in the past decade.

The relatively low shares of developing countries in world processed agricultural exports have been attributed to several factors. Apart from exporting countries' domestic capacity constraints and other trade barriers, tariff escalation by importing countries is often considered the major market access barrier limiting developing countries' ability to expand exports of their processed products. If the current world tariff regime persists, dependence on exports of primary agricultural commodities will continue to be a prominent feature in many developing countries.

It can be argued that some developing countries have a comparative advantage in primary production and export and that capturing this comparative advantage can have a positive impact on their economies. Important questions arise, however, about whether primary agriculture will be a sustainable development strategy for them for the future. First, there is little value addition in producing and exporting primary products, whose terms of trade have been in constant decline in recent decades. Trade growth in primary products has also been sluggish, averaging only 3.3 percent a year.[5] And even this slow growth is distributed unevenly among countries. Therefore, if most of the economic activity of a country is centered on the primary sector, growth would be too slow for the country to achieve its development goals. Second, the sources of some raw materials are bound to be exhausted sooner or later, and if a country fails to develop a strong manufacturing base, natural resources will inevitably be depleted. Furthermore, dependence on raw material exports often puts a country at the mercy of unpredictable climatic and world market conditions. The situation is exacerbated by the fact that commodity prices are often depressed by developed countries as a result of their high agricultural subsidies.

Why Does Tariff Escalation Persist?

Although tariff escalation is a significant impediment to world trade, it is difficult to eliminate because of the rent-seeking behavior of economic agents and the resulting political economy of trade policies. From an economic standpoint, rent seeking is the process by which an individual, organization, or firm seeks to gain by manipulating the economic and political environment. Unlike profit seeking, rent seeking generally implies the extraction of uncompensated value from others without taking actions that improve productivity. For example, rent seeking may consist of imposing regulations or other government decisions that may affect other economic agents.

Rent seeking is pervasive in the setting of tariff regulations through which government protection benefits domestic firms. An escalating degree of tariff protection allows domestic processing industries (downstream activities) to compete, often unfairly, with foreign exporters. Like many other protective policies, tariff escalation reflects the underlying structure of political influence within a country. The same structure also governs the feasibility of any reforms that may seek to eliminate tariff escalation and hence make trade freer.

[5] Slow growth in primary commodity trade is due to the low income elasticity of demand for primary products and their decreasing intensity of use in economic activities. Studies have also shown that changes in the organizational structure of commodity markets are important. For example, the high costs associated with processing, packaging, advertising, marketing, and distribution mean that the cost of primary commodities as a share of the processed product price is usually small.

Table 1: Tariff Escalation and Annual Average Global Export Value, Selected Countries and Agricultural Products, 2000–2002

Primary, intermediate, and final products	Average bound tariffs (%)					Global exports (million US$)	All developing-country exports	
	Australia	Canada	European Union-15	Japan	United States		Value (million US$)	Market share (%)
Cocoa								
Cocoa beans	1	0	0	0	0	8,380	8,084	96
Cocoa paste	0	0	10	8	0	838	440	52
Cocoa butter	0	0	8	0	0	4,397	1,887	43
Cocoa powder	9	6	27	19	16	620	156	25
Chocolate and products	17	57	18	21	15	4,355	361	8
Coffee								
Coffee: not roasted	1	0	4	0	0	14,213	13,592	96
Coffee: roasted	0	0	8	12	0	1,843	164	9
Coffee mixtures and extracts	1	1	12	39	10	2,638	1,084	41
Grains								
Grains	1	11	42	133	2	9,356	2,360	25
Grain products	4	11	41	93	8	2,857	399	14
Vegetable oils								
Oilseeds	1	0	0	66	16	2,527	883	35
Vegetable oil	4	6	10	7	4	31,018	12,649	41
Beef, pork, and poultry								
Meat: fresh or frozen	0	54	40	41	7	12,240	1,817	15
Meat preparations	7	50	37	91	3	1,712	532	31
Sugar								
Sugar	12	5	61	198	24	13,840	9,292	67
Sugar confectionery	11	9	20	16	11	4,625	1,255	27
Tobacco								
Unmanufactured tobacco	10	10	38	9	60	7,461	3,963	53
Tobacco products	16	4	14	0	46	6,467	898	14

Notes: Calculations are based on WTO bound tariffs; products (primary, intermediate, and final) are listed for various processing stages (the steps taken to convert a raw material into a finished consumer product); vegetable oils exclude tropical oils (palm, palm kernel, and coconut).
Source: USDA 2006.

Table 2: Impact of the Harbinson Proposal on Tariff Wedges and Export Values

Product	Base tariff wedge (%)	Tariff wedge under Harbinson (%)	Percentage change in export value			
			World	Developed countries	Developing countries	LDCs
Coffee: green			1.0	0.9	1.0	1.1
Coffee: roasted	2.7	1.6	0.4	0.3	0.6	0.4
Cocoa beans			0.3	0.3	0.3	0.3
Cocoa powder	7.3	4.4	1.4	1.2	1.6	7.3
Cocoa butter	-4.7	-5.7	1.1	0.6	1.3	n.a.
Chocolate	24.7	11.0	6.5	6.3	6.8	6.7
Oilseeds			1.8	1.2	2.4	28.1
Vegetable oils	-21.3	-8.4	4.6	2.2	5.0	6.1

Source: Elamin and Khaira 2004.
Note: n.a. indicates not available.

Table 3: Share in World Agricultural Exports (%)

Period	Primary products			Processed products		
	Developed	Developing	LDCs	Developed	Developing	LDCs
1981–1990	66.2	33.8	3.1	73.0	27.0	0.7
1991–2000	67.4	32.6	2.2	75.0	25.0	0.3

Source: FAO 2004.

Tariff escalation generates substantial benefits (economic rent) for industry groups, whose lobbying power is perceived as "influential" in the country. Because these groups are beneficiaries of the existing tariff structure, a reform that will cost them rent losses will be politically infeasible.

The elimination of tariff escalation may also be hampered by the "free-rider" problem in political lobbying. Political interests who are successful in lobbying for tariff escalation are typically the manufacturing and processing industries because the gains are concentrated in relatively few hands (so they can act collectively) and they are able to capture enough of the gains (economic rent) to compensate them for the effort they devote to the policy-making process. Those who lose from a tariff escalation are the consumers of processed products. Although these "losers" are much more numerous than the "winners," their costs are smaller on average and not sufficient to induce them to spend resources to lobby their government to avoid the tariff escalation. Instead, they would prefer someone else to do it for them so that they can "free-ride" on the efforts of similarly minded individuals. Consequently, the only lobbying pressure typically comes from the industry that gains from the tariff, and the government succumbs to this one-sided pressure.

To Retaliate or Not?

Suppose that developed countries impose escalated tariffs on their imports from developing countries. The governments of developing countries are sometimes forced to retaliate with the same escalated tariff structure on their own imports by political pressure from their own vested interest groups, just like the ones that keep tariff escalation in place in developed countries. From an economic (game theoretic) standpoint, choosing tariff escalation may be the dominant strategy for both developing and developed countries. When all countries choose this dominant strategy, however, a least-efficient outcome occurs (a "lose-lose" situation), even though this outcome may represent an equilibrium (Nash equilibrium).

What if developing countries do not retaliate? The move from retaliation to non-retaliation by developing countries does not necessarily trigger a

change in the strategy of developed countries, which might gain even more by maintaining tariff escalation. This is clearly a "lose-win" situation where developing countries lose and developed ones win. The historical evidence suggests that a number of developing countries, especially the small ones, are indeed pursuing this non-retaliatory option—they continue to be primary producers and exporters. Some larger developing economies that have greater economic power have chosen to retaliate by setting their own escalated tariffs. Even in this case, developing countries are likely to lose because they can hardly impose a credible threat (because of their limited import market size), and developed countries are keeping their tariff escalation intact.

Is There a Way Out?

The WTO may offer some hope for breaking this deadlock. Indeed, the UR of the WTO has made substantial progress in reshaping the world tariff structure in a direction toward fewer distortions in agricultural markets and better market access conditions for developing-country exporters. For example, the average tariff cuts are 36 percent for developed countries and 24 percent for developing countries at the end of their respective UR implementation periods. The impact of the UR on tariff escalation, however, has been much less significant. Studies have shown that tariff escalation is still widespread in the present world agricultural trading system.

One of the most comprehensive analyses of tariff escalation was conducted by Lindland (1997), covering 226 agricultural commodities in input and output pairs in three import markets—the EU, Japan, and the United States. The study found that although there was a reduction in the bound tariff wedges between processed and primary products following the UR, more than half of the commodity pairs examined still had escalating bound tariffs after the full implementation of the UR commitments. The highest post-UR bound tariff escalation was found in the dairy, sugar, fruit, tobacco, and hides and skins sectors (Lindland 1997). Other studies have found similar results. For example, Elamin and Khaira (2004) showed that tariff escalation persisted after full implementation of the UR agreement, and the degree of escalation was higher for bound tariffs than applied tariffs. UNCTAD (2003) evaluated tariff escalation for 12 agricultural commodity pairs by averaging nominal tariffs for different processing stages in the Quad markets. The study found that most of the post-UR tariffs escalated from raw to semi-finished products and from semi-finished to finished products. Earlier studies by USDA (USDA 2001), the Swedish Board of Agriculture (Burman et al. 2001), and the OECD (1996, 1997) also showed widespread tariff escalation in agricultural markets in both developed and developing countries.

How to Proceed?

Consistent with these studies that showed widespread tariff escalation in the post-UR period, many negotiating proposals have called for eliminating or reducing tariff escalation as an explicit goal within the market access pillar of the Doha Round negotiations. There is little consensus, however, about how future reductions should proceed. The official text on negotiations, the Hong Kong Declaration of December 2005, in its Annex A (para. 17) under "other elements" of market access, states as follows: "There has been no further material convergence on the matters covered by paragraphs 35 and 37 of the July 2004 Framework text. The same may be said for paragraph 36 on tariff escalation, albeit that there is full agreement on the need for this to be done, and a genuine recognition of the particular importance of this for commodities exporters." Thus no agreement has so far been reached on reducing and eliminating tariff escalation, and the official position of the WTO remains, as stated in its 2004 Framework, that a formula needs to be found.

Despite the lack of an agreement, several tariff-cutting formulas have been proposed with the aim of reducing tariffs, and in particular tariff escalation. Two approaches (and their variants) are favored most by WTO member countries—they are the "Uruguay Round approach" and the "harmonizing reduction approach." The Uruguay Round approach provides a linear tariff cut—that is, tariffs are reduced by the same percentage no matter what the starting tariff rate is. Variations are allowed for specific products so long as a simple average across all products meets the target. The rate would be negotiated along with reduction rates for export subsidies and domestic support, as well as other issues. Supporters say this approach is simple and flexible. Critics say it could produce insignificant improvement in market access and would not deal with tariff peaks and escalation.

The harmonizing reduction approach would produce much steeper cuts on higher tariffs. It is a nonlinear tariff-cutting approach that would have a homogenizing effect on all tariff lines. Supporters

of the harmonizing approach, those previously advocating the "cocktail" approach, say it is needed in order to reduce tariff peaks and escalation. Critics say this formula is too ambitious, requires too much adjustment, and is inequitable because countries with lower tariffs would not have to do much. Some also argue that the harmonizing approach would be too complicated because it would require converting specific tariffs into ad valorem tariffs. Within the harmonizing approach, two types of formulas have been proposed: the tiered formulas and the mathematical formulas (for example, the Swiss formula). The tiered formula, accepted by many as a general tariff reduction method, was proposed in the most recent modality by New Zealand Ambassador Crawford Falconer (TN/AG/W/4). There is much less agreement, however, about which formula to select in terms of reducing tariff escalation in particular.

What about LDCs?

LDCs gain access to the markets of developed countries, and particularly the EU, essentially through preferential agreements. These agreements define conditions of preferential access to the European market, but they are not subject to multilateral international negotiations, which instead concern the exchanges governed by the most-favored-nation (MFN) regime.[6] One of the LDCs' fears concerning WTO negotiations is that their advantage could be eroded by tariff cuts on an MFN basis.

Tariff escalation is not a real problem for LDCs; this group of countries enjoys similar levels of preferential access for both primary and processed products in developed-country markets.[7] A reduction of tariff escalation on an MFN basis, however, will significantly erode their preferential advantages. To illustrate, a tariff reduction strategy—for example, the Harbinson proposal, a rather moderate formula with regard to reduction of tariff escalation—can be applied to the EU market.[8] The tariff-cutting results and the implications for the preferential margins of the African, Caribbean, and Pacific (ACP) countries are summarized in Table 4.

Following the Harbinson tariff reduction formula, accession to the EU market is considerably improved for the Generalized System of Preferences beneficiaries (the average tariff is reduced from 17.9 percent to 9.0 percent), but at the same time the preferential margin for these countries is almost nullified (dropping from about 3 percent to 0.4 percent). Access to the EU market is hardly modified for the ACP countries, but they suffer from significant reduction of their preferential margin. This margin, which was 15.4 percent, would drop to 5 percent after implementation of Harbinson formula.

Based on this analysis, it is evident that any deep reduction of tariff peaks and tariff escalation on an MFN basis will affect preferential margins and result in substantial preference erosion for the LCDs. It will further allow other countries to gain part of the LCDs' share in the developed markets and therefore lead to stronger competition for LDCs. If LDCs must compete directly with other developing countries and even developed countries, they are poised to lose from the reduction of tariff escalation.

Stakeholders

Developed Countries

Tariff escalation can benefit developed countries for economic and political reason. First, tariffs (including tariff escalation) provide an important source of revenue for the government. Escalated tariffs in the form of tariff peaks generate high marginal revenue for a given import value. Second, tariff escalation can be used as a retaliatory tool against a tariff structure imposed by a trade partner or an act of "dumping" by a foreign firm. The latter are called anti-dumping duties.

[6] The WTO's most-favored-nation principle means that each member treats all the other members equally as "most-favored" trading partners. If a member improves the benefits that it gives to one trading partner, it must give the same "best" treatment to all other WTO members so that they all remain "most-favored."

[7] For example, Chevassus-Lozza and Gallezot (2003) show that tariff escalation for various commodities is close to zero at all stages of the production process for ACP countries.

[8] The ACPs include 77 countries in the Africa, Caribbean, and Pacific region that benefit from preferential market access to the EU. In addition, the EU also uses a Generalized System of Preferences (GSP), giving special and preferential treatment to 178 developing countries and territories.

Table 4: Effect of the Harbinson Formula on MFN and Preferential Tariffs (%)

Time period	MFN	ACP	GSP	Other preferences
Before Harbinson	20.7	5.3	17.9	2.7
After Harbinson	9.4	4.4	9.0	2.2

Source: Chevassus-Lozza and Gallezot 2003.
Note: MFN = most favored nation; ACP = Africa, Caribbean, and Pacific; GSP = Generalized System of Preferences.

Third, tariff escalation is part of a "strategic trade policy" in some developed countries. This policy entails government collusion with industry in promoting the sale of processed products by large firms in an international oligopoly (or some form of imperfectly competitive market where price and production follow strategic or game-type behavior). This is particularly true when agricultural commodity chains, particularly those of high-value crops and processed products, become more powerful and are increasingly dominated by a few multinational enterprises (MNEs). Within this context, the food-processing companies, especially MNEs, are the clear beneficiaries of an escalated tariff structure. For these companies, tariff escalation implies advantageously low rates of duty on their imported inputs in relation to the protection they receive against imported products that compete with those they produce.

It is important to note that consumers in developed countries are also stakeholders in, and apparently losers from, tariff escalation. Higher tariffs lead to increased prices for food products they purchase and decreased consumer surplus. The lost consumer surplus goes partly to producer surplus and government tariff revenues and partly to deadweight losses.

Developing Countries

Tariff escalation particularly affects the processed-food sector in developing countries. High tariffs on processed agricultural products prevent their export and create a disincentive for agricultural processing. The impact of tariff escalation on the food-processing industry can be amplified to the country level. Specifically, tariff escalation limits the scope of trade-induced industrialization that can occur in developing countries. It prevents developing countries from moving into higher stages of processing and diversifying their exports, hence reducing their relative share of final value added and their ability to maintain positive trade balances. Escalated tariffs shift the economic activity of exporting countries toward primary production and away from processing, locking them into volatile primary commodity markets that are characterized by low and deteriorating world prices—a further burden on their balance of payments. Tariff escalation can also lead to excessive exploitation of natural resources and thus damage the environment in these countries. The removal of escalating tariffs would enable developing countries to develop a stronger manufacturing base and thus capture a larger share of the final value of export earnings, and in turn to generate more employment, investment opportunities, and sustainable growth.

Least-Developed Countries

A significant share of LDCs' agricultural exports are directed to the developed-country markets under preferential agreements. A comparison of tariff escalation under the different preferential schemes in the previous section reveals that tariff escalation is not a severe problem for the LDCs. Any reduction of tariff escalation on an MFN basis, however, will result in substantial preference erosion for the LDCs. It will further allow other countries to gain part of the LDCs' share in the developed-country markets, and therefore LDCs will face stronger competition.

Policy Options

Trade Negotiations

Multilateral trade negotiations through the WTO may be an option conducive to further reduction of tariff escalation, although their effectiveness has been questioned on various occasions since the UR. The fact is, however, that even though tariff escalation persisted after the UR, the problem has been less serious than it was before the UR. Lindland (1997) showed that the average post-UR nominal (bound) tariff wedge (for all commodities with positive tariff wedges) was 17 percent—6 percent less

than the base year average of 23 percent. Table 5 shows the five commodities with highest post-UR tariff escalation rates and compares them with corresponding base year numbers. In all cases tariff escalation measured by tariff wedges decreased following the UR. To complement these results, studies on post-UR proposals have shown that further reduction in tariff escalation can be expected as a result of current trade negotiations. For example, Sharma (2006) finds that tariff escalation can be effectively reduced from 25 percent in the base period to 4, 6, and 7 percent (unweighted averages) following the proposals by the United States, Group of 20, and the EU, respectively, at the Doha Round.

Possible Reduction Methods

On the technical aspects of addressing tariff escalation in the trade negotiations, different tariff-cutting methods have been proposed. But until now, there has been no unanimous support for any one method. The first draft of modalities (TN/AG/W/1/Rev.1), the Harbinson text of March 2003, reconciles the two most popular methods—the Uruguay Round approach and the harmonizing approach. The text relevant to tariff escalation, in the paragraph following the tariff reduction formula (para. 8), reads as follows: "In applying this formula, where the tariff on a processed product is higher than the tariff for the product in its primary form, the rate of tariff reduction for the processed product shall be equivalent to that for the product in its primary form multiplied, at a minimum, by a factor of [1.3]." In other words, whenever the formula results in positive tariff escalation, a factor of [1.3] will be applied to reduce the gap. This rather concrete proposal for reducing tariff escalation was not, however, carried forward in the subsequent texts because it was found to be "fraught with technical problems," most notably the use of a single multiple factor (Sharma 2006, 16).

Sharma (2006) suggests an alternative idea that deviates from negotiating a single adjustment factor or a multiple as proposed in the 2003 Harbinson text. Sharma argues that agreements on escalated tariff-cutting formulas must be reached on two key building blocks. First, a list of processed products and their corresponding primary products should be identified for applying the formula, no matter what formula is used. A group of 20–25 processed products, about 100 tariff lines, and about 150–200 tariff lines for the corresponding primary products should be selected for the targeted list. In addition, an agreement would be needed on a threshold, or a *de minimis* level, within which to contain the tariff escalation for the products identified. The *de minimis* level could be, for example, a tariff wedge of 5 percentage points between primary and processed products for developed countries and 10 percentage points for developing countries. It would then be relatively straightforward to determine the required adjustment factors for tariff reduction rates, over and above the formula rates.

Table 5: Bound Tariff Escalation for Selected Commodities

	Tariff wedges (%)	
Country or region/product	Base tariffs	UR bound tariffs
European Union		
Fruit products	102.5	84.8
Sugar products and sweeteners	39.8	37.2
Dairy and egg products	51.6	34.4
Root and tuber products	31.0	19.8
Tobacco and pyrethrum	37.3	14.1
Japan		
Sugar products and sweeteners	96.9	82.2
Root and tuber products	61.1	50.3
Hides and skins	60.0	30.0
Dairy and egg products	36.9	29.1
United States		
Cassava starch	40.1	38.0
Malt of barley	38.1	36.9
Dairy and egg products	39.7	33.6
Sugar products and sweeteners	36.1	31.2

Source: Lindland 1997.

Special Considerations for LDCs

Any reduction method should explicitly consider the need to preserve the preferential treatment of the LDCs. For the LDCs, the real problem is neither tariff peaks nor tariff escalation, but the erosion of preferences following any tariff reduction. In general, the outcome from addressing tariff escalation (or tariff reduction in general) for the LDCs will be negative, and the anticipated negative effects will be greater if more drastic tariff reduction formulas are adopted, including the possibility of applying an additional formula to the general one to specifically address tariff escalation.

A number of compensatory measures can be envisioned that would preserve or even enhance LDCs' preferential treatment. First, developed countries can deepen their preference programs by granting the LDCs duty-free and quota-free market access to all agricultural products that are covered in existing programs. Second, developed countries can widen the coverage of preference programs by extending the duty-free and quota-free access to all agricultural products including those that have not been covered in existing programs (that is, developing a system similar to EU's Everything But Arms initiative). Third, preferential market access for LDC exports can be broadened to include advanced developing countries in the group of preference-granting countries. Lastly, preference-granting countries can strengthen existing preference programs and new preference initiatives by making them permanent and unconditional (for example, by applying simpler rules of origin and eliminating eligibility conditions other than being an LDC).

A North-South Coalition

Welfare could be enhanced if some countries (preferably developed countries) make some concessions during multilateral trade negotiations in terms of reducing tariff escalation and thereby induce others to follow. By reducing their tariff escalation, developed countries could both help promote processed imports into their markets and expand their own exports to other countries. A "win-win" situation will result if all countries eliminate tariff escalation. However appealing this situation may be, political lobbying by selected groups within developed countries may derail efforts to reduce tariff escalation. In this case, a coalition of political interests could provide a necessary and politically proactive way out.

Specifically, the strategy would rely on forming and strengthening a coalition of interests between developing-country producers (of processed goods, which are labor intensive), and developed-country consumers. The thread connecting such a coalition is civil society, particularly the consumer and environmental organizations of developed as well as developing countries. With this coalition, it would be politically feasible for developed countries' governments to remove tariff escalation and thus create the basis for a win-win situation.

Domestic Capacity Building

Besides tariff escalation, internal supply constraints have also limited the ability of developing countries to take advantage of trading opportunities in processed agricultural products. These constraints include weak technology; insufficient transport, storage, and marketing infrastructure; inadequate legal and regulatory arrangements; and policy-induced disadvantages resulting from trade and macroeconomic policies that are biased against agriculture and exports. Therefore, strategies aimed at reducing tariff escalation should be accompanied by other domestic and trade policies designed to enhance the internal capacity of developing countries. Sometimes these policies will require international cooperation and financial and technical assistance from developed countries.

Assignment

Your assignment is to recommend to the WTO a change in trade policy measures that would allow tariff escalation to be reduced and eventually eliminated.

Additional Readings

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